Social Capital, Public Spending and the Quality of Economic Development: the Case of Italy*

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Abstract

This paper carries out an empirical assessment of the relationship between social capital and the quality of economic development in Italy. The analysis draws on a dataset collected by the author including about two hundred variables representing different aspects of economic development and four "structural" dimensions of social capital. The quality of development is measured through human development and indicators of the state of health of urban ecosystems, public services, gender equality, and labour markets, while social capital is measured through synthetic indicators representing strong family ties, weak informal ties, voluntary organizations, and political participation.
The quality of development exhibits a strong positive correlation with bridging weak ties and a negative correlation with strong family ties. Particularly, the analysis shows a strong correlation between informal ties and an indicator of "social well-being" (synthesizing gender equality, public services and labour markets) and between voluntary organizations and the state of health of urban ecosystems. Active political participation proves to be irrelevant in terms of development and well-being. Finally, the role of public spending for education, health care, welfare work, and the environment protection is analysed, revealing a scarce correlation both with social capital and development indicators.

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1. Introduction

The idea that society matters for economic growth is not a novelty in the economics debate. As pointed out by Cole, Mailath and Postlewaith (1992), 'The interaction between the organization of a society and its economic performance was once considered perhaps the fundamental question of political economy'. Despite its acknowledged importance, this issue has been neglected for a long time by the contemporary economic literature. Only during the last decade, due to precious spurs coming from the other social disciplines and to the recent emergence of endogenous growth theories in economics, we have witnessed a real explosion of the number of studies addressing the social roots of growth, often grouped together under the common label of "social capital". Social capital has therefore rapidly become a popular tool for the explanation of macro phenomena like total factor productivity and growth differentials. Empirical economic studies focusing on social capital's effects at the macro level generally refer to per capita income as the main indicator of development. However, the extent to which well-being and development progress can be simply measured by income is open to question and widely discussed (Max-Neef, 1989, Daly and Cobbs, 1989, Lawn and Sanders, 1999). Starting from the assumption that both social capital and economic development are multidimensional concepts, this paper carries out an empirical assessment of the relationship between four social capital's structural dimensions and the "quality of economic development" in Italy. The analysis is based on a dataset collected by the author including about two hundred variables representing different aspects of economic development and four "structural" dimensions of social capital: strong family ties (generally referred to as bonding social capital), weak informal ties (bridging social capital), voluntary organizations (linking social capital), and political participation. The quality of development is measured through human development and indicators of the state of health of urban ecosystems, public services, social protection, gender equality, and labour markets. Following Sen's (1981) idea that public spending plays a fundamental role in improving the quality of life, the amount of public expenditure for social protection and public services is also used to assess the state's effort in fostering well-being, and to carry out an investigation into the relationship between public action, social capital and development.

Rough data are drawn from a set of multipurpose surveys carried out by the Italian National Bureau of Statistics (Istat), and from the 2004 annual report on the quality of development edited by the Italian association *Lunaria*, in the context of a campaign assessing national budget law's contents, promoted by 35 Italian NGOs. A principal component analysis (PCA) is run on each of the four groups of variables with the aim to build synthetic indicators for corresponding social capital structural dimensions. These indicators are then used as latent variables in a further factor analysis, investigating the relationship between social capital and economic development.

The main findings of the study can be summarized as follows: a clear distinction between two types of networks emerges. The former is shaped by strong family ties, and corresponds to what the theoretical literature generally calls bonding social capital. The latter is shaped both by weak ties among friends and neighbours and by formal ties linking together people coming from different social backgrounds within the boundaries of voluntary organizations. Such networks, corresponding to what the literature often terms "bridging" and "linking" social capital, tend to juxtapose each other in the Italian regions. Regional endowments of the two types of social capital are very different. Areas characterized by higher levels of bonding social capital can suffer from a lack of bridging and linking social capital. The quality of development in the Italian regions exhibits a positive correlation with bridging and linking social capital and a negative correlation with strong family ties. Active political participation proves to be irrelevant for social well-being and does not increase public spending amounts. Particularly, the analysis shows a strong correlation between bridging social capital and a "social quality" index (synthesizing the national health care system's efficiency, the degree of gender equality, the quality of school infrastructures and the degree of labour precariousness) and between linking social capital and the state of health of urban ecosystems. Public spending exhibits weak correlations both with all of social capital dimensions and with indicators of well-being. Interestingly the correlation with the social quality index is negative.

The contribution of this paper to the social capital literature is threefold. Firstly, the methodological framework offers the possibility to carry out reliable and precise international comparisons. Secondly, the analysis provides a single, synthetic, indicator capturing that particular configuration of social capital which the literature generally associates with positive economic outcomes. Such a measure, which I call "developmental social capital" can be adopted as a suitable point of departure for deeper empirical investigations on social capital's effects in terms of growth, development, and well-being. This indicator is a novelty in the social capital literature, and constitutes a new analytical tool in the hands of researchers aiming to investigate on the relationship between social capital and its outcomes, both at national and cross-country level. Thirdly, the analysis provides an empirical testing of the widespread idea that bonding and bridging social capital exert different and conflicting effects on the process of economic development. The study also confirms the well-known polarization between Northern and Southern Italy, both in terms of social capital and economic development.

The outline of the paper is as follows: sections from two to four introduce the concept of social capital and its relationship with economic development through a brief review of the literature. Section five provides a brief description of the adopted methodology. Section six presents synthetic

indicators built by means of principal component analyses for each social capital dimension. Such measures are then used within the empirical investigation of the relationship between social capital and the quality of development carried out in sections seven and eight. The survey is closed by some concluding remarks and guidelines for further researches.

2. What is social capital

The concept of social capital has a long intellectual history in the social sciences, but has gained celebrity only in the 90s, due to Bourdieu's (1980, 1986), Coleman's (1988, 1990) and Putnam's (1993, 1995) seminal studies. Bourdieu identifies three dimensions of capital each with its own relationship to the concept of class: economic, cultural and social capital. Bourdieu's idea of social capital puts the emphasis on class conflicts: social relations are used to increase the ability of an actor to advance her interests, and social capital becomes a resource in the social struggles: social capital is 'the sum of the resources, actual or virtual, that accrue to an individual or group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition' (Bourdieu and Wacquant, 1986, 119, expanded from Bourdieu, 1980, 2). Social capital thus has two components: it is, first, a resource that is connected with group membership and social networks. 'The volume of social capital possessed by a given agent ... depends on the size of the network of connections that he can effectively mobilize' (Bourdieu 1986, 249). Secondly, it is a quality produced by the totality of the relationships between actors, rather than merely a common "quality" of the group (Bourdieu 1980). At the end of the 80s, Coleman gave new relevance to Bourdieu's concept of social capital. According to Coleman, 'Social capital is defined by its function. It is not a single entity, but a variety of different entities, with two elements in common: they all consist in some aspect of social structures, and they facilitate certain actions of actors within the structure' (Coleman, 1988, 98). In the early 90s, the concept of social capital finally became a central topic in the social sciences debate. In 1993, Putnam, Leonardi and Nanetti carried out their famous research on local government in Italy, which concluded that the performance of social and political institutions is powerfully influenced by citizen engagement in community affairs, or what, following Coleman, the authors termed "social capital". In this context, social capital is referred to as 'features of social life-networks, norms, and trust, that enable participants to act together more effectively to pursue shared objectives' (Putnam, 1994, 1).

3. Social capital and economic development

Cited perspectives on social capital are different in origins and fields of application, but they all agree on the ability of certain aspects of the social structure to generate positive externalities for

members of a group, who gain a competitive advantage in pursuing their ends. The basic idea is that a social environment rich of participation opportunities, allowing people to meet frequently, is a fertile ground for nurturing shared values and social norms of trust and reciprocity. The likelihood of repeated interactions among agents grows, increasing reputation's relevance. The better diffusion of information and the higher opportunity cost of free-riding make the agents' behaviour more foreseeable and causes an uncertainty reduction. Therefore, an increase in trust-based relations reduces the average cost of transactions, just as an increase in physical capital reduces the average cost of production (Paldam and Svendsen, 2000, Routledge and von Amsberg, 2003, Torsvik, 2000, Zak and Knack, 2001). Many empirical studies suggest that, at the aggregate level, this mechanism may influence the economic performance and the process of development, providing a credible explanation for growth differentials among regions with similar endowments in terms of the other forms of capital. The most influential contribution in this field is the already cited work by Putnam, Leonardi and Nanetti (1993), who find that social capital matters in explaining regional differences in the Italian economic and institutional performance. Another notable study is that of Fukuyama (1995), who sustains that social capital in the form of non-family or generalized trust is of crucial importance for successful performance in advanced economies. After these seminal studies, the empirical literature has widely investigated the role of social capital in driving a variety of aspects of the economic growth process. Guiso, Sapienza, and Zingales (2004) measure social capital through two indicators of civicness that are 'hardest to explain with self-interested agents: electoral participation and blood donation' (Guiso, Sapienza and Zingales, 2004, 529). They find that in Italy, the level of social capital is positively related to financial development. People with more social capital have higher investments in the stock market and have more access to formal financial institutions. Similarly, Hong, Kubik, and Stein (2004) find that in the United States, people who "know their neighbours" have higher stock-market participation rates. Drawing on various indexes of institutional quality compiled by investment agencies and human rights groups, many cross-country empirical studies show that items such as "generalized trust", "rule of law," "civil liberties," and "bureaucratic quality" are positively associated with economic growth (Kormendi and Meguire, 1985, Barro, 1994, 1996, Heliwell, 1996, Collier and Gunning, 1997, Johnson and Temple, 1998, Temple, 1998, Zak and Knack, 2001). In a review of this strand of the literature, Knack (1999) concludes that 'social capital reduces poverty rates and improves, or at a minimum does not worsen, income inequality' (Knack, 1999, 28).

However, the empirical evidence on the linkage between economic prosperity and social capital is not always convincing and sometimes conflicting. Putnam (2000) and Costa and Kahn (2003) document the large decline in social capital in the United States in the twentieth century. While this

fact is linked to some economic measures, it is hard to argue that the U.S. economy did not flourish over this same period. On the other hand, the decline itself of U.S. social capital has been widely questioned. For example, Paxton (1999) analyzes multiple indicators of social capital in the United States over a 20-year period. The results do not support Putnam's claims, showing instead some decline in a general measure of social capital, a decline in trust in individuals, no general decline in trust in institutions, and no decline in associations. In other words, taking additional information into account does necessarily allow clearer interpretations.

Knack and Keefer (1997) find that trust and civic norms are unrelated to horizontal networks and have a strong impact on economic performance in a sample of 29 market economies, suggesting that, if declining social capital in the United States has adverse implications for growth, it is the erosion of trust and civic cooperation, as documented by Knack (1992), that are of greater concern than the decline in associational life emphasized by Putnam (1995a, 1995b).

The complexity of the relationship between social capital and growth is even more evident at the theoretical level. In particular, it is possible to argue that economic growth could be itself a factor of social capital's destruction: if people devote too time to work and consumption, therefore sustaining growth, few time remains for social participation. Routledge and von Amsberg (2003) show that the process of economic growth is generally accompanied with higher labour turnover, which changes the social structure increasing heterogeneity and affecting social capital. The authors focus on social capital as the aspects of the social structure influencing cooperative behaviour. In larger communities, which grow faster or are more efficient, social capital can deteriorate, making cooperative trade generally harder to sustain. On the contrary, reduced labour mobility, which results in decreased labour efficiency, increases welfare by increasing the proportion of trades that are cooperative. In other terms, «the benefit of the increased social capital can outweigh the cost of lost efficiency» (Routledge and von Amsberg, 2003, 172). This result is supported by Alesina and La Ferrara (2000), who show that in heterogeneous communities participation in groups that require direct contact among members is low, arguing that such a decline destroys social trust therefore hampering economic growth. This study contains an interesting empirical result about the substitution between social and private activities. The authors show that, controlling for individual and community level variables, «moving from a full-time to a part-time job increases the propensity to participate» (Alesina and La Ferrara, 2000, 880): working more brings about a reduction in social participation. Costa and Kahn (2003) show that this process has been particularly relevant for women in the last half century, since the enormous increase in their labour force participation rate, in the U.S. as well as in other advanced societies, has subtracted them much time previously available for social activities. Devoting most time to work and consumption can also be interpreted

as a “defensive choice”: Antoci, Sacco and Vanin (2002) argue that the individual utility of social participation depends both on own and on aggregate participation, as well as on the opportunities available in the social environment. Agents may “defend” themselves from a poor social environment by shifting to private activities, less exposed to external effects. The authors show that: «If this strategy spreads over, private activities will be fostered, but at the expense of social activities. Since both effects accumulate over time, the outcome may be a joint occurrence of economic growth and social poverty» (Antoci, Sacco and Vanin, 2002, 23). On the contrary, spending more time in social activities can lead to a richer social environment, but may act as an obstacle to private growth. However, the political science literature widely shows that social participation can foster the diffusion of trust (Almond and Verba, 1963, Brehm and Rahn, 1997, Stolle, 1998, Stolle and Rochon, 1998, Hooghe and Stolle, 2003, Wollebæk and Selle, 2003), therefore indirectly supporting economic growth. In other terms, it is possible to argue that, if economic growth destroys social participation and trust, it can run faster, but is not sustainable in the long run.

Considered studies all suggest the possibility that, even at the aggregate level, different forms of social capital may affect the economic performance, the process of growth and the quality of economic development. The analysis in this paper provides an empirical testing both of the correlation between social capital and economic development and of the widespread idea that bonding and bridging social capital can exert different and conflicting effects. Due to the lack of suitable data, this kind of investigations is quite rare in the literature. The analysis results confirm that the social capital of weak ties positively affects development as hypothesized by Granovetter (1973) and Putnam, Leonardi and Nanetti (1993), while the “amoral familism” often connected to the strength of family ties can hamper progress and development, as suggested by Banfield (1958).

4. The problem of measuring social capital

Despite the great amount of research on it, the definition of social capital has remained elusive. From a historical perspective, it is possible to argue that social capital is not a concept but a *praxis*, a code word used to federate disparate but interrelated research interests and to facilitate the cross-fertilization of ideas across disciplinary boundaries. As pointed out by Brown and Ashman (1996), one of the primary benefits of the idea of social capital is that it is allowing scholars, policy makers and practitioners from different disciplines to enjoy an unprecedent level of cooperation and dialogue. While conceptual vagueness may have promoted the use of the term among the social sciences, it also has been an impediment to both theoretical and empirical research of phenomena in

which social capital may play a role (Durlauf and Fafchamps, 2004). Summarizing, the greater difficulties affecting the empirics of social capital can be identified with two main problems.

The first one is the use of macro indicators not directly related to social capital's key components. Such indicators – e.g. crime rates, teenage pregnancy, blood donation, participation rates in tertiary education – are quite popular in the empirical research, but their use has led to considerable confusion about what social capital is, as distinct from its outcomes, and what the relationship between social capital and its outcomes may be. Research reliant upon an outcome of social capital as an indicator of it will necessarily find social capital to be related to that outcome. Social capital becomes tautologically present whenever an outcome is observed (Portes, 1998, Durlauf, 1999, Stone, 2001). In order to avoid such shortcomings, this paper focuses only on the "structural" component of social capital, as identified with social networks.

The second main problem facing the empirical literature is "aggregation". Great part of existing cross-national studies on the economic outcomes of social capital is based on measures of trust drew from the *World Values Survey*. Trust measured through surveys is a "micro" and "cognitive" concept, in that it represents the individuals' perception of their social environment, related to the particular position that interviewed people occupy in the social structure. The aggregation of such data, however, creates a measure of what can be called "macro" or "social" trust which looses its linkage with the social and historical circumstances in which trust and social capital are located. As pointed out by Foley and Edwards (1999), empirical studies based on cross-country comparisons of trust may be a "cul de sac", because of their inability to address macro outcomes, in view of the absence of the broader context within which attitudes are created and determined. Fine (2001) argues that «if social capital is context-dependent – and context is highly variable by how, when and whom, then any conclusion are themselves illegitimate as the basis for generalisation to other circumstances» (Fine, 2001, 105). My effort of taking into account such insights is based on the rejection of trust as a suitable social capital indicator and on the use of data on people's effective behaviour as collected by the Italian National Institute of Statistics (Istat) in its multipurpose surveys. Following Fukuyama (1999), and differently from great part of the empirical literature, trust is here considered as an epiphenomenon, arising as a result of social capital, and not constituting social capital itself. This assumption is due to the wide heterogeneity of social networks, which, according to their nature and scope, can in turn nurture or hamper human, social, and economic development.

5. The statistical model

The point of departure of the empirical analysis carried out in this paper is the acknowledgment of the very multidimensionality of the concept of social capital, which cannot be represented by a single indicator. This study is therefore based on a wide dataset collected by the author including about two hundred indicators of four main social capital dimensions: strong family ties, weak informal ties, voluntary organizations, and political participation. Data are drawn from a set of multipurpose surveys carried out by the Italian National Bureau of Statistics (Istat) on a sample of 20 thousand households between 1998 and 2002 (see Istat, 2000, 2001, 2002a, 2002b, 2002c, 2002d, 2003, 2004a, 2004b, cited in bibliography).

Principal component analyses (PCAs) are performed on each of the four groups representing social capital "structural" dimensions, in order to build synthetic, latent, indicators. I do not want to go into the details about the computational aspects of PCA here, which can be found elsewhere (see for example Lebart, Morineau and Warwick, 1984, Johnson and Wichern, 1992). However, basically, PCA explains the variance-covariance structure of a dataset through a few linear combinations of the original variables. Its general objectives are data reduction and interpretation. Although p components are required to reproduce the total system variability, often much of this variability can be accounted for by a small number, k, of the principal components. If so, there is (almost) as much information in the k components as there is in the original p variables. The k principal components can then replace the initial p variables, and the original dataset, consisting of n measurements on p variables, is reduced to one consisting of n measurements on k principal components. An analysis of principal components often reveals "latent" relationships that were not previously suspected and thereby allows interpretations that would not ordinarily result. Every couple of selected principal components creates a factorial plan, which may offer a powerful graphic representation of distances between analysis units. Factorial plans are particularly suitable for comparing different geographical areas. This approach is considered "exploratory" - as opposed to great part of the other empirical analyses, which constitutes confirmatory approaches - in that it explores the underlying relations existing in data without having the claim to explain causalities in such relations. Analysis units can be reclassified according to the new "composite measures" provided by underlying factors, and factor scores can then be used as the raw data to represent the independent variables in a regression, discriminant, or correlation analysis. In this study, factor scores are the Italian regions' coordinates on the first principal components representing the four social capital dimensions taken into consideration. For the region i, the factor score is given by the sum of scalar products between the p variables describing i and versor u_α corresponding to the α-th principal component. It therefore constitutes a new variable measuring region i, resulting as a linear combination of the initial p

variables, whose weights are given by the α-th factorial axis. Formally, the α-th principal component is expressed as a new variable c_α by:

$$c_\alpha = Xu_\alpha \quad \text{or} \quad \{...c_{\alpha i}...\} = \left\{ ... \sum_j^p x_{ij} u_\alpha^j \right\}, \quad (1)$$

where $\boldsymbol{X}$ is the data matrix and x_{ij} are its elements.

The model's quality can be controlled through the evaluation of the cases' "absolute contributions" and of the axes' "representation quality". Absolute contributions show how much of the variance explained by the α-th component is due to the i-th case, therefore signalling the presence of potential "outliers". The absolute contribution of the i-th case to the α component is given by:

$$AC = \frac{p_i c_\alpha^2(i)}{\lambda_\alpha} = \frac{p_i c_\alpha^2(i)}{\sum_i p_i c_\alpha^2(i)} \quad (2)$$

where $c_{\alpha(i)}$ is the score of region i on the α-th factor, weights p_i are uniform in all the PCAs performed in this paper - in order to give the same importance to the statistical units and to highlight differences among regions - and λ_α is the eigenvalue corresponding to the α-th component. If the element i explains too much of a factor's variance, the factorial model is "conditioned" by that element, therefore loosing its reliability. When this is the case, element i must be treated as an outlier. Squared cosines are the relative contribution of the α-th factor to the explanation of each unit's variance. They therefore constitute the representation quality (RQ) of the i-th element on the α-th component, as given by:

$$RQ_\alpha(i) = \cos^2 \vartheta_{x_i,\Delta\alpha} = \frac{\|x_{i,\Delta\alpha}\|_M}{\|x_i\|_M} = \frac{c_\alpha^2(i)}{\sum_{\alpha=1}^k c_\alpha^2(i)} \quad (3)$$

where k is the number of significant eigenvalues λ considered in the analysis, $\vartheta_{x_i,\Delta\alpha}$ is the angle shaped by i-th case's vector and the α-th factor. An high squared cosine means that the α-th factor is powerfully able to explain the i-th case.

6. An atlas of social capital in Italy ten years after *Making Democracy Work*

The empirical analysis is based on four different types of social networks, which are described in detail in their multifaceted aspects by Istat's multipurpose surveys data:

1. informal networks shaped by strong family ties.
2. Informal networks of friends and acquaintances.
3. Formal networks connecting members of voluntary organizations
4. Formal and informal networks related to active political participation.

A PCA is performed on each group of variables representing these four kinds of networks, with the objective:

a. to build a synthetic, latent, indicator for each social capital dimension.
b. To point out the possible co-existence of diverse latent dimensions within each type of social network.

Factor scores resulting from each PCA are used to assess regional endowments of social capital, allowing to build classifications and graphic representations, which suggestively point out the extreme polarization separating Northern and Southern Italy.

6.1 Social capital as informal networks of strong ties

The family household, as a place in which social relations characterised by trust and reciprocity operate, has received relatively little attention in social capital research. Studies focusing on social capital within a family household typically investigate the impact of social capital on a given family outcome – often child development or wellbeing. The works of Coleman (1988), Furstenberg and Hughes (1995) and Amato (1998) are probably the most notable studies of this type. Coleman's study (1988) suggests that social capital may exist within the family unit as in other social networks. In his analysis of the role of social capital in the creation of human capital, Coleman focuses upon parent child relations and uses measures of the physical presence of adults in a household and attention given by adults to children as empirical indicators of such relations. The "strength" of family relations is measured by the author using a ratio of parents to children. This

approach does not take into account neither the quality of parents-children relationships nor the importance of non-resident parents and of the other relatives outside the family.

Amato (1998) broadens Coleman's (1988) definition of family social capital to include parent-parent relationships as well as parent-child relationships, and uses a 'marital discord' variable to measure parent-parent relations. Despite the breadth Amato adds to the study of networks of family relations, and his attention to the quality rather than quantity of relationships in comparison to Coleman (1988), the analysis remains limited. Apart from not recognising all family relationships (for example child-child or others), Amato's analysis of parent-parent relations tell us about relationship conflict but arguably, like Coleman, little about family social capital. Furstenberg and Hughes (1995) raise questions about the social capital role of non-resident parents, thus potentially expanding the family network beyond the limitation of household walls, to include other significant family members.

In this paper, I measure family social capital through indicators of the family composition (e.g. COPFIG and FAMSING), of the spatial distance between family members (e.g. MUM1KM and FIG1KM), of the relevance of other relatives (e.g. INCPAR2S), and of the quality of relationships both with family members and with the other relatives (e.g. CONTPAR and SODDPAR). Adopted variables are described in detail in Table A1.1, Annex 1. Correlations are as expected, with the notable exception of SODDPAR, expressing people satisfaction for the quality of their relationships with relatives: the frequency of contacts and the spatial proximity are everywhere negatively correlated with the level of satisfaction. Strongly correlated variables (like COPFIG and COPNOFIG) are intentionally kept together in the dataset with the aim to increase the explanatory power of the factorial axes resulting from the PCA. The correlation matrix is reported in Table A1.2. The first principal component explains about 62 percent of the variation of the data and all factor loadings on the first axis are extremely high. The first principal component therefore provides a valuable indicator of the bonding social capital shaped by strong family ties. In particular, lower factor scores are associated with a higher frequency of family contacts and with a higher spatial proximity between family members, but also with a lower satisfaction for the quality of familiar relationships. The synthetic indicator provided by the PCA is therefore an expression of the strength of family ties, but does not take into account their quality. The corresponding ranking of the Italian regions is presented in Table 1, alongside with cases' absolute contributions and squared cosines.

Campania exhibits the highest score, and, more in general, Southern regions register higher endowments of bonding social capital. It is noteworthy observing that negative scores do not correspond to negative endowments, in that the classification is merely "comparative" and based on

a latent, unobservable, variable (the first principal component), obtained as a result of a linear combination of the multiple variables composing the initial dataset.

Table 1. Italian regions ranking based on bonding social capital endowments

Rank	Region	Factor scores	Contributions	Squared cosines
1	Campania	-5,90	16,96	0,88
2	Puglia	-4,72	10,86	0,83
3	Calabria	-4,36	9,25	0,71
4	Basilicata	-3,84	7,19	0,72
5	Sicilia	-3,37	5,54	0,59
6	Sardegna	-2,82	3,87	0,47
7	Umbria	-1,26	0,77	0,15
8	Marche	-0,20	0,02	0,01
9	Molise	-0,06	*outlier*	0,00
10	Abruzzo	0,08	0,00	0,00
11	Veneto	0,53	0,14	0,05
12	Trentino Alto Adige	0,56	0,15	0,03
13	Lazio	1,49	1,09	0,15
14	Lombardia	1,65	1,32	0,41
15	Emilia Romagna	2,65	3,42	0,65
16	Toscana	2,67	3,47	0,62
17	Friuli Venezia Giulia	3,15	4,83	0,43
18	Valle d'Aosta	3,76	6,89	0,57
19	Piemonte	4,56	10,10	0,89
20	Liguria	5,39	14,14	0,77

At the bottom of the ranking, a case for Liguria clearly emerges. According to the original measurement carried out by Putnam, Leonardi and Nanetti (1993), Liguria was one of the most healthy Italian regions. My rankings show that not only this region is particularly poor of bonding social capital, but also that its endowments of bridging and linking social capital have rapidly worsened during last ten years. The destruction of family social capital in Liguria may be explained as a consequence of a strong process of population aging. The annual natural increase (the surplus of births over deaths) is negative since 1970. The birth rate is actually the lowest in Italy, and the death rate is the highest. The international migration balance is positive and contributes to the increase of the social structure's heterogeneity (Istat, 2004c), while the divorce rate is among the highest (Istat, 2004d).

6.2 Social capital as informal networks of weak ties

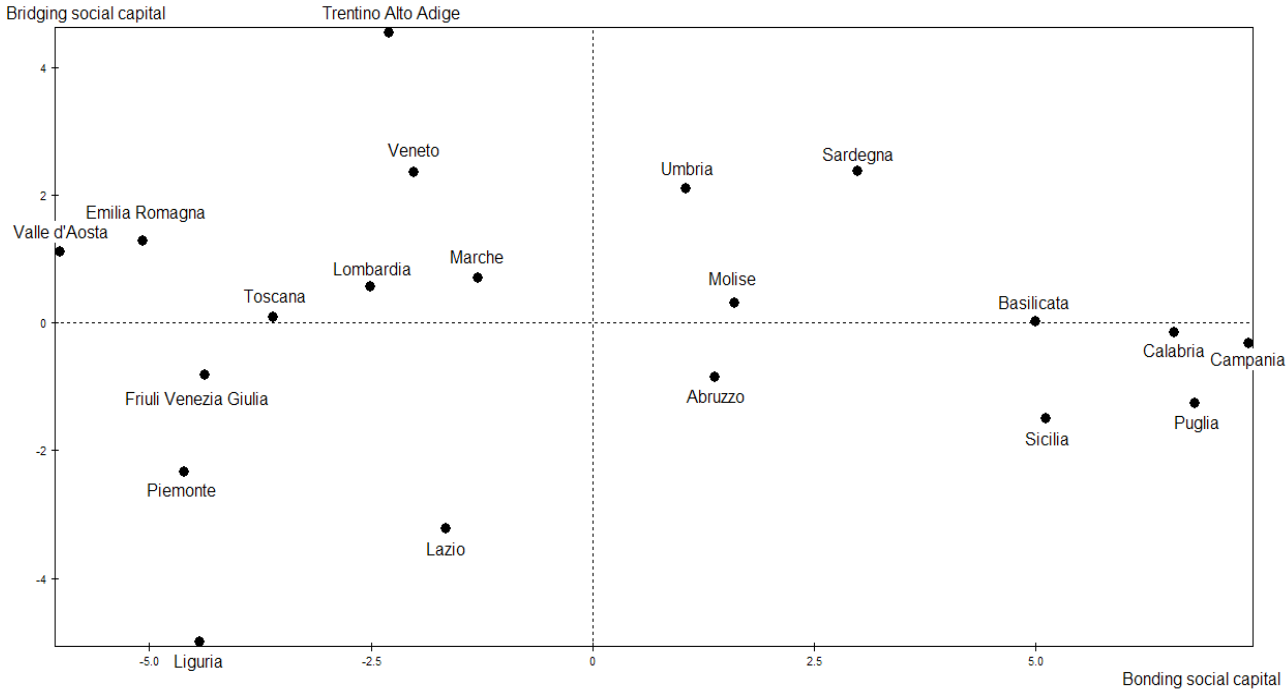
Putnam's (1995) study on American civil society drew a distinction between the different types of social networks likely to support social capital. Putnam identified neighbourhood networks – something he described as "good neighbourliness" – as promoting social capital. In contrast, the

leisure activity of bowling alone, rather than in an organised club activity, is presented by Putnam as evidence of "social disengagement". Since Putnam's (1995) analysis, a number of studies have measured networks of friends, neighbours and acquaintances somewhat more precisely. In this paper I focus on several indicators of people social engagement or, in other terms, of what can be referred to as "relational goods", like ASSPORT and BAR2S. According to great part of the literature, social capital is accumulated not only through standard mechanisms of individual investments, but also as a result of the simultaneous production and consumption of relational goods taking place in the context of different kinds of social participation. It is noteworthy that the relationship between (production and consumption of) relational goods and the accumulation of social capital has a double direction. On one side, a higher social capital increases the returns to the time spent in social participation. For instance, it is easier and more rewarding going out with friends in a context that offers many options for socially enjoyed leisure (e.g. MUBAR and CENAF2S). In other words, social capital may be seen as an improvement in the technology of production of relational goods. On the other side, a higher social participation brings about social capital accumulation as a by-product. For instance, trust (or empathy) may be reinforced and generalized through social interactions (Antoci, Sacco and Vanin, 2002). Adopted variables are described in Table A1.5. A PCA on this dataset provides a synthetic indicator for regional endowments of informal social networks of friends, which are generally referred to as bridging social capital by great part of the literature. The first two principal components explain about 70 percent of the variation of the data and the first axis powerfully represents the bridging social capital given by weak ties connecting friends and acquaintances. The corresponding ranking of the Italian regions is presented in Table 2. Campania lies now at the bottom of the ranking, together with the other Southern regions. The better endowed region is Trentino Alto Adige, while the case for Liguria is confirmed, in that this region appears as the poorest in Central and Northern Italy with respect to bridging social capital. Once again, negative scores do not correspond to negative endowments, because of the comparative nature of the classification.

A PCA on the entire dataset on informal social networks, including both family strong ties and weak ties connecting friends and neighbours allow us to point out the polarizations between strong and weak ties, on the one hand, and between Northern and Southern regions, on the other. The first factorial plan satisfactorily explains about the 63 percent of the variation of the data. The active variables-factors correlations highlights the polarization between family social capital and weak ties connecting friends and acquaintances. The first factorial plan resulting from the PCA is represented in Figure 1. Weak ties among friends and acquaintances are here labelled as bridging social capital, while strong family ties are termed bonding social capital.

Table 2. Italian regions ranking based on bridging social capital endowments				
Rank	Region	Factor scores	Contributions	Squared cosines
1	Trentino Alto Adige	-4,34	16,23	0,72
2	Valle d'Aosta	-3,35	9,70	0,79
3	Veneto	-2,71	6,33	0,56
4	Emilia Romagna	-2,69	6,24	0,60
5	Friuli Venezia Giulia	-2,21	4,22	0,69
6	Marche	-1,69	2,46	0,51
7	Toscana	-1,30	1,46	0,33
8	Lombardia	-0,93	0,74	0,12
9	Umbria	-0,61	0,32	0,11
10	Piemonte	-0,36	0,11	0,05
11	Sardegna	0,06	0,00	0,00
12	Molise	0,24	0,05	0,01
13	Abruzzo	1,00	0,87	0,39
14	Liguria	1,36	1,59	0,43
15	Basilicata	1,43	1,75	0,11
16	Lazio	1,64	2,33	0,35
17	Calabria	2,94	7,44	0,68
18	Sicilia	3,68	11,69	0,62
19	Puglia	3,91	13,16	0,67
20	Campania	3,93	13,31	0,85

Figure 1. First factorial plan resulting from the PCA on informal networks



6.3 Social capital as voluntary organizations

Following Putnam (1993, 1995), great part of the literature has used membership in voluntary associations as an indicator of social capital, assuming that such groups and associations function as "schools of democracy", in which cooperative values and trust are easily socialized.

Most empirical studies on the effect of voluntary associations have shown that their members exhibit more democratic and civic attitudes as well as more active forms of political participation than non-members. Membership in associations should also facilitate the learning of cooperative attitudes and behaviour, including reciprocity. In particular, they should increase face-to-face interactions between people and create a setting for the development of trust. In this way, the operation of voluntary groups and associations contributes to the building of a society in which cooperation between all people for all sort of purpose – not just within the groups themselves – is facilitated (Almond and Verba, 1963, Brehm and Rahn, 1997, Hooghe, 2003, Seligson, 1999, Stolle and Rochon, 1998). The claim is that in areas with stronger, dense, horizontal, and more cross-cutting networks, there is a spillover from membership in organizations to the cooperative values and norms that citizens develop. In areas where networks with such characteristics do not develop, there are fewer opportunities to learn civic virtues and democratic attitudes, resulting in a lack of trust.

However, there are several reasons to doubt of the efficacy of social capital measures simply based on the density of voluntary organizations. Firstly, even though individuals who join groups and who interact with others regularly show attitudinal and behavioural differences compared to nonjoiners, the possibility exists that people self-select into association groups, depending on their original levels of generalized trust and reciprocity[1]. Secondly, the group experiences might be more pronounced in their impact when members are diverse and from different backgrounds. This type of group interaction, which is called "bridging", brings members into contact with people from a cross-section of society and, as a result, gives a more relevant contribution to the "socialization" of norms of trust and reciprocity. The "heterogeneity argument" has been used to criticize the empirical literature on social capital. According to some authors, if diversity matters for socialization of cooperative values, then voluntary associations might not be the measure to take

[1] People who trust more might be more easily drawn to membership in associations, whereas people who trust less might not join in the first place. For example, using a dataset sampling members and non-members in various associations in three countries (Germany, Sweden and the United States), Stolle (2001) shows that, with regard to generalized trust, the self-selection effects were more pronounced than the membership effects. This essentially means that people with higher levels of trust indeed self-select into associations.

into account, as such groups have been found relatively homogeneous in character. Voluntary associations indeed generally recruit members who have already relatively high civic attitudes (Popielarz, 1999, Mutz, 2002, Uslaner, 2002). Finally, face-to-face interactions inside voluntary organizations could be modest and not necessarily imply the sharing of information and values. This is particularly true in advanced economies, where participation in voluntary organizations is often limited to an annual subscription related to the payment of a membership fee. This kind of civic participation may have small spillover effects, scarcely contributing to the diffusion of trust.
More in general, until now the literature has not provided a micro theory explaining trust's transmission mechanism from groups to the entire society, and the logic underlying the connection between social ties and generalized trust has never been clearly developed[2].
In the light of the arguments summarized above, we can state that:

a) indicators of social capital as civic participation might take into account different variables measuring not only the density of voluntary organizations (i.e. the number of organizations in which a mean citizen is involved, or the so-called "Putnam's instrument"), but also the heterogeneity of members, and the degree of their involvement into the associational life. For example, the former can be described by the "heterogeneity index" proposed by Grootaert (2002)[3], while the latter can be measured through multiple variables (e.g. indicators of the willingness to carry out unpaid work, the frequency of meetings, and the members' ability to influence collective decisions).

b) Every finding on the correlation and/or the causal nexus connecting membership in civic associations to supposed social capital's economic outcomes must be handled with extreme caution.

In this paper, the density of voluntary organizations is measured through ORGANIZ. The degree of members involvement in the association's life is measured through AIUTOVOL, RIUASCU,

[2] On this regard it is noteworthy that some studies stress the importance of passive membership for the diffusion of trust and democratic values (Almond and Verba, 1963, Wollebæk and Selle, 2003). Analysing data from a Belgian survey on civic participation, Hooghe (2003) concludes that 'the socializations effects of interaction within voluntary associations are not uniform, but context dependent … This implies that not all voluntary associations will actually contribute to the formation of social capital, but only those associations in which a democratic culture is present' (Hooghe, 2003, p. 106).

[3] To test their internal homogeneity, Grootaert (2002) rated Indonesian voluntary associations according to 8 criteria: neighbourhood, kin group, occupation, economic status, religion, gender, age, level of education. A value of 1 indicated that members of the association were "mostly from different" occupation, economic status, religion, signalling a higher level of heterogeneity. On this basis, the author constructed a score ranging from 0 to 8 for each of the three associations. The score of the three associations was averaged for each household and the resulting index was re-scaled from 0 to 100. Unfortunately this kind of data is not available for Italy.

RIUASEC, SOLDASS and AMIVOL. Adopted variables are described in detail in Table A1.3. The PCA allows us to build a synthetic indicator for the linking social capital of voluntary organizations. The first principal component explains about 67 percent of the variation of the data, while the first factorial plan explains about 84 percent. Lower regions' scores on the first axis are associated with a higher propensity to join meetings and funding associations and also, but more weakly, with the propensity to carry out volunteering activities, as expressed by AIUTOVOL. This variable more powerfully loads on the second principal component. This suggests that civil society is a complex phenomenon with at least two major dimensions. The first one is shaped by people's propensity to carry out light forms of participation, like joining meetings and giving money to associations. The second one is given by people's propensity to carry out volunteering activities "on the field", with the aim to give concrete help to disadvantaged people.

It is of interest to rank the Italian regions also according to this more active form of social participation. The scattergram of the Italian regions given by the first factorial plan is therefore presented in Figure 2. The regional ranking based on the first principal component is reported in Table 3. It confirms the strong polarization between Northern and Southern Italy. Veneto, Friuli Venezia Giulia, Toscana and Emilia Romagna lead the ranking, while Campania lies at the bottom, together with Sicilia and Puglia.

Figure 2. First factorial plan resulting from the PCA on voluntary organizations

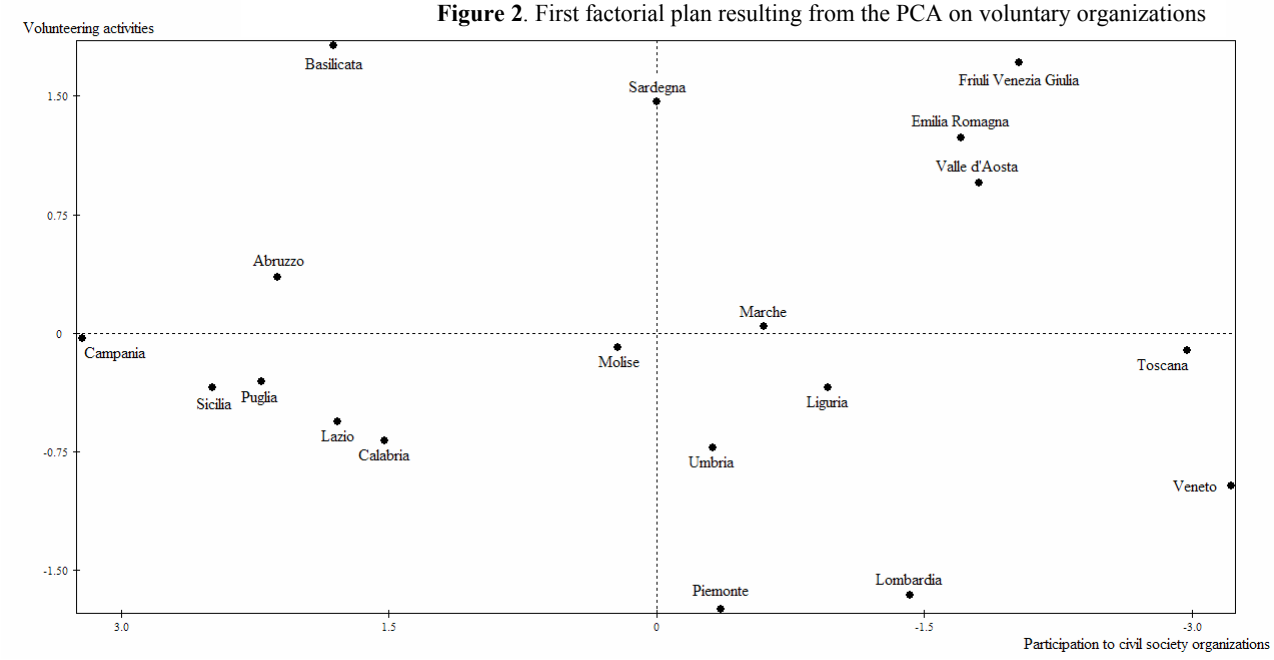


Table 3. Italian regions rankings based on participation to voluntary organizations				
Rank	Region	Factor scores	Contributions	Squared cosines
1	Trentino-Alto Adige	-10,60	*outlier*	0,81
2	Veneto	-3,22	15,31	0,83
3	Toscana	-2,97	13,01	0,77
4	Friuli Venezia Giulia	-2,03	6,07	0,47
5	Valle d'Aosta	-1,81	4,80	0,68
6	Emilia Romagna	-1,70	4,28	0,47
7	Lombardia	-1,42	2,97	0,35
8	Liguria	-0,96	1,36	0,66
9	Marche	-0,60	0,53	0,10
10	Piemonte	-0,36	0,19	0,03
11	Umbria	-0,31	0,15	0,02
12	Sardegna	0,00	0,00	0,00
13	Molise	0,22	0,07	0,01
14	Calabria	1,53	3,43	0,70
15	Lazio	1,79	4,72	0,78
16	Basilicata	1,81	4,84	0,48
17	Abruzzo	2,13	6,66	0,91
18	Puglia	2,21	7,21	0,83
19	Sicilia	2,49	9,12	0,89
20	Campania	3,22	15,28	0,98

6.4 Social capital as active political participation

In this paper, I consider political parties as a particular type of formal networks which constitute an integral part of social capital's definition. Adopted variables (Table A1.4) have been chosen in the attempt to capture the relational dimension of political participation (COMIZIO and CORTEO) and the degree of involvement in the organization's life (ATGRAPAR and SOLDPAR). The first two axes account for 80,34 percent of the variance. Three variables representing more active political participation (COMIZIO, CORTEO and ATGRAPR) are strongly correlated with the first axis, while people's propensity to fund political parties (SOLDPAR) is highly correlated with the second axis. Therefore, we can state that political participation, as well as social participation through voluntary organizations, is a complex phenomenon, with at least two dimensions: the first one is shaped by active forms of political participation, while the second one represents a lighter form of involvement. Trentino Alto Adige and Emilia Romagna are treated as outliers, since their joint absolute contributions to the second axis would otherwise account for 63,8 percent. It is quite surprising to note that Southern regions like Calabria, Puglia and Molise exhibit the highest scores

together with regions characterized by a deep tradition of political participation like Toscana and Emilia Romagna.

Table 4. Italian regions ranking based on active political participation

Rank	Region	Factor scores	Contribution	Squared cosines
1	Trentino-Alto Adige	5,86	*outlier*	0,76
2	Emilia Romagna	4,79	*outlier*	0,85
3	Molise	2,86	21,22	0,88
4	Calabria	2,79	20,23	0,95
5	Puglia	2,35	14,36	0,82
6	Basilicata	1,86	9,04	0,73
7	Sardegna	1,04	2,79	0,58
8	Toscana	0,26	0,17	0,01
9	Liguria	-0,16	0,06	0,02
10	Veneto	-0,33	0,28	0,22
11	Piemonte	-0,60	0,93	0,16
12	Sicilia	-0,78	1,57	0,09
13	Abruzzo	-0,78	1,60	0,29
14	Umbria	-0,93	2,23	0,27
15	Lazio	-1,08	3,01	0,47
16	Valle d'Aosta	-1,10	3,16	0,18
17	Marche	-1,13	3,33	0,84
18	Campania	-1,20	3,73	0,43
19	Friuli Venezia Giulia	-1,51	5,94	0,84
20	Lombardia	-1,56	6,36	0,85

The classification based on the first principal component (table 4) is led by Northern regions characterized by a deep tradition of political participation, but also by Southern regions generally showing low levels of civic attitudes, as measured by the latter two social capital's dimensions (see sections 6.2 and 6.3) and by other notable empirical studies like that carried out by Putnam, Leonardi and Nanetti (1993). This trend can be attributed to the fact that, in Southern Italy, political militancy is often considered as a mean to pursue narrow, sectarian, interests and to obtain patronage favours, rather than a way to participate in collective affairs (Partridge, 1998, Walston, 1988, Mutti, 2000, Golden, 2003).

6.5 In search of a single synthetic indicator of social capital. A multiple factor analysis

Finally, a multiple factor analysis (MFA) is run in search of an indicator synthesizing regional endowments of the four structural dimensions of social capital. Without going into theoretical and computational details (which can be found, for example, in Escofier and Pagès, 1984), MFA is a

multivariate technique particularly suitable for addressing matrixes composed by a set of units described by multiple groups of variables. It studies the different aspects of the multidimensional phenomenon by weighting each group of characteristics in order to properly balance their respective relevance to the general analysis. Let $\boldsymbol{X}$ be the multiway matrix, and $\boldsymbol{X}_k$ the submatrixes gathering the different groups of variables. The MFA carries out a "weighted" principal component analysis of $\boldsymbol{X}$. Every characteristic belonging to the *k*-th group will be weighted by the quantity:

$$\frac{1}{\sqrt{\lambda_{1k}}},$$

where λ_{1k} is the highest eigenvalue resulting from the PCA performed on the *k*-th group. Such a method allows to balance each group's role in the general analysis and provides a representation of considered units and variables which can be interpreted following the same criteria of the PCA. Once again, analysis units can be measured through new latent indicators, which are more synthetic than those provided by normal PCAs, in that they summarize regional endowments in terms of each group of variables. Factors resulting from the MFA are called "total" factors, as distinguished from "partial" factors resulting from normal PCAs.

Groups labels are defined as follows: 1. strong family ties, 2. weak informal ties, 3. linking ties of voluntary organizations, 4. active political participation. The matrix of correlations between partial factors is presented in Table 8.

Table 8. Matrix of correlations between partial factors (GGFF with G = group and F = factor)

GGFF	101	102	201	202	301	302	401	402
101	1,0000							
102	0,0000	1,0000						
201	-0,6985	0,0415	1,0000					
202	-0,0980	0,5443	0,0000	1,0000				
301	-0,7429	0,1095	0,8984	0,0756	1,0000			
302	-0,0834	0,1209	-0,1595	0,3410	0,0000	1,0000		
401	0,2853	-0,2776	-0,1963	-0,3880	-0,0902	-0,2663	1,0000	
402	-0,5287	0,1853	0,7358	-0,1515	0,5595	-0,3222	0,0000	1,0000

Factors belonging to the same group are obviously not correlated, as they are principal components. Correlations' signs are not subject to interpretation, since factors orientation is irrelevant.

The structure of relationships between groups is analysed through the *Lg* coefficients. These indexes express the correlation between each two groups of variables, computed as the sum of

squared covariances between each column of the *k*-th group and each column of the *k'*-th group. The *Lg* relation coefficients between groups are reported in Table 9. Coefficients are homogeneous, with the exception of the active political participation group.

Table 9. *Lg* relation coefficients between groups

	Group 1	Group 2	Group 3	Group 4	All groups
Group 1	1,1170				
Group 2	0,6348	1,2562			
Group 3	0,6379	0,8730	1,1337		
Group 4	0,3708	0,4624	0,3269	1,3381	
All groups	0,9444	1,1038	1,0166	0,8547	1,3410

The interpretation of the factorial plan resulting from the MFA is made observing each groups' coordinates, contributions and squared cosines on the first two axes (Table 10), and active partial axes' coordinates, contributions and representation quality on total factors (Table 11).

Table 10. Coordinates and helps to the interpretation of the active groups

		Coordinates		Contributions		Squared cosines	
Group	d²(Group, origin)	axis 1	axis 2	axis 1	axis 2	axis 1	axis 2
1	1,3381	0,7793	0,1153	26,6633	8,6126	0,5438	0,0119
2	1,3381	0,9035	0,2149	30,9116	16,0581	0,6499	0,0368
3	1,3381	0,8704	0,1460	29,7779	10,9087	0,6682	0,0188
4	1,3381	0,3697	0,8622	12,6472	64,4206	0,1021	0,5556
All groups				1,0000	1,0000	0,4784	0,1701

Table 11. Coordinates and helps to the interpretation of active partial axes

			Coordinates		Contributions		Squared cosines	
Groups	Partial axis	Weights	Axis 1	axis 2	axis 1	axis 2	axis 1	axis 2
Group 1	1	1,0000	0,8697	-0,0857	25,8805	0,5485	0,7565	0,0073
(Normal PCA)	2	0,2412	-0,1332	0,4092	0,1463	3,0186	0,0177	0,1675
Group 2	1	1,0000	-0,9459	-0,1304	30,6130	1,2706	0,8948	0,0170
(Normal PCA)	2	0,4477	-0,0946	0,6098	0,1371	12,4375	0,0090	0,3718
Group 3	1	1,0000	-0,9288	-0,1537	29,5131	1,7658	0,8626	0,0236
(Normal PCA)	2	0,2851	0,0363	0,4400	0,0129	4,1230	0,0013	0,1936
Group 4	1	1,0000	0,2890	-0,9017	2,8580	60,7508	0,0835	0,8131
(Normal PCA)	2	0,5324	-0,7151	-0,2943	9,3152	3,4465	0,5114	0,0866

The first three groups are satisfactorily represented on the first total factor. Higher scores on this factor correspond to higher endowments of bridging and linking social capital (i.e. groups 2 and 3)

and, more weakly, of bonding social capital (group 1). The active political participation group is well represented on the second total factor. Higher scores on the corresponding axis are associated with higher levels of active political participation.

Regions' coordinates on the first axis therefore provide a new powerful, synthetic, measure of "global" endowments of social capital, representing positive endowments of all the phenomenon's structural dimensions with the exception of active political participation. The corresponding classification of the Italian regions is reported in Table 12. The ranking is substantially similar to that resulting from the PCA on the four structural dimensions of social capital. The exceptions are due to the influence of bonding social capital on the first factor: Piemonte and Liguria slightly slide down and Campania leaves the last position.

Table 12. Ranking of the Italian regions based on "global social capital"

Rank	Region	Factor scores	Contributions	Squared cosines
1	Trentino Alto Adige	4,8866	*outlier*	0,4190
2	Valle d'Aosta	2,3781	10,1835	0,6418
3	Emilia Romagna	2,0958	7,9095	0,3494
4	Veneto	1,9572	6,8973	0,5225
5	Friuli Venezia Giulia	1,8695	6,2932	0,4613
6	Toscana	1,7750	5,6734	0,4141
7	Lombardia	1,3020	3,0523	0,3201
8	Liguria	0,9894	1,7626	0,1765
9	Piemonte	0,9519	1,6316	0,2012
10	Marche	0,8258	1,2281	0,1991
11	Umbria	0,5170	0,4813	0,0699
12	Sardegna	-0,3413	0,2097	0,0245
13	Lazio	-0,6681	0,8036	0,0909
14	Abruzzo	-0,7986	1,1483	0,1890
15	Molise	-1,1963	2,5771	0,1359
16	Basilicata	-1,7604	5,5802	0,3470
17	Sicilia	-2,1899	8,6355	0,4870
18	Calabria	-2,2549	9,1555	0,5811
19	Campania	-2,6649	12,7881	0,6631
20	Puglia	-2,7873	13,9893	0,6949

7. Measuring well-being. Income vs. alternative indicators

In the last decade there has been a wide debate on the extent to which well-being and development progress can be simply measured by income. While questioning the ability of Gross Domestic Product (GDP) to capture human progress, the economics literature has developed a variety of alternative indicators. Some notable examples are Daly and Cobbs's (1989) Index of Sustainable

Economic Welfare (ISEW), the Genuine Progress Indicator or GPI (Redefining Progress, 1995) and the Sustainable Net Benefit Index or SBNI (Lawn and Sanders, 1999). In this paper, I focus on different dimensions of well-being, as measured by human development and indicators of the state of health of urban ecosystems, public services, social protection, gender equality, and labour markets. Following Sen's (1981) conviction that public spending plays a fundamental role in improving the quality of life, the amount of public expenditure for social protection and public services is used to assess the state's effort in fostering well-being. In particular, the quality of development is measured through four synthetic indicators, elaborated by *Lunaria* (2004) in the context of a campaign assessing national budget law's contents, promoted by 35 NGOs. They are ISUA, an adjusted version of the Human Development Index adopted by the United Nations Development Programme, ECOURB, capturing the state of health of urban ecosystems, QUALSOC, an index of "social quality" and QUASPUB, an indicator summarizing the amount of public spending for health services, education, welfare work and the environment protection.

7.1 Measuring well-being in Italy

The human development index has been adjusted by *Lunaria* (2004) to take into account Italy's level of wealth, different from that of most developing countries. Particularly, the index of life expectancy has been computed adopting 50 and 85 years respectively as minimum and target levels, the index summarizing literacy and schooling has been replaced by the rate of high school attendance, and the index of per capita income has been computed adopting 5.000 € and 40.000 as minimum and target levels. Adopted variables are described in Table B1 (Annex B). The corresponding ranking of the Italian regions is reported in Table 12.

It is noteworthy that rich regions like Lombardia and Trentino-Alto Adige exhibit also some of the lowest levels of high school attendance. This is probably due to the greater importance generally acknowledged to the transition from school to work and to the higher labour market flexibility characterizing these regions.

Table 12. Italian regions ranking based on the adjusted human development index

Rank	Region	Life ex-pectancy	Rank	School attendance	Rank	Per capita income	Rank	Adjusted HDI
1	Emilia-Romagna	0,8664	8	0,9304	9	0,7144	1	0,837
2	Friuli V.G.	0,8556	12	0,9338	6	0,6813	4	0,8236
3	Liguria	0,8527	14	0,9385	5	0,6774	5	0,8229
4	Toscana	0,8727	6	0,9252	10	0,6623	7	0,8201
5	Marche	0,8926	1	0,9696	1	0,581	11	0,8144
6	Umbria	0,8779	4	0,9557	2	0,5737	12	0,8025
7	Lazio	0,8546	13	0,943	4	0,5928	10	0,7968
8	Lombardia	0,8521	15	0,8333	16	0,6989	2	0,7948
9	Valle d'Aosta	0,8486	18	0,8384	15	0,6906	3	0,7925
10	Abruzzo	0,8782	2	0,9327	7	0,5493	13	0,7868
11	Piemonte	0,8501	16	0,8643	13	0,6284	8	0,7809
12	Veneto	0,8709	7	0,8488	14	0,6201	9	0,7799
13	Sardegna	0,849	17	0,9243	11	0,4801	14	0,7511
14	Trentino A.A.	0,8755	5	0,6993	20	0,6711	6	0,7486
15	Molise	0,878	3	0,9309	8	0,4284	15	0,7458
16	Basilicata	0,8576	11	0,9466	3	0,4013	17	0,7352
17	Puglia	0,8625	9	0,8134	17	0,4271	16	0,701
18	Calabria	0,8595	10	0,8678	12	0,3253	20	0,6842
19	Campania	0,8127	20	0,8102	18	0,3922	18	0,6717
20	Sicilia	0,84	19	0,7957	19	0,3507	19	0,6621

Source: *Lunaria* (2004)

The index of urban ecosystems is drawn by *Lunaria* (2004) from *Legambiente*'s (2003a) annual report on the quality of urban environments. It is computed as the weighted average of 20 key indicators including, for example, air monitoring results, pedestrian precincts, the efficiency of public transports services and of water softening systems. Basic variables adopted in building the synthetic indicator are described in Table B2.

The "social quality" index is computed by Lunaria (2004) with the aim to account for four dimensions of well-being: the efficiency of public health services, gender equality, labour precariousness and the quality of public school infrastructures. Health services efficiency is measured through SODDSAN, an index expressing people opinion on the national health care system, with regard to medical assistance, nursing assistance, and hygienic conditions. Gender equality is measured through PARIOPP, aiming to capture women's integration into the labour market (as expressed by the difference between men's and women's employment rates) and women's involvement in local politics (as expressed by membership in regional councils). Labour precariousness is measured by PRECAR, an index summarizing the number of casual workers

having provisional contracts like the so called *co-co-co* (*collaborazioni continuate e coordinate*) or looking for a job. Finally, public school infrastructures are assessed through AMBSCU, the weighted average of 52 indicators of the school environment's quality collected by *Legambiente* (2003b) at the provincial level (weights are given by each province's population). QUALSOC is the arithmetic mean of these four indexes, which are described in detail in Table B3. The corresponding ranking of the Italian regions is reported in Table 7.

Table 13. Italian regions ranking based on the social quality index

Rank	Region	Health services	Schools Environment	Gender equality	Labour precariousness	Social quality
1	Friuli-V.Giulia	0,5707	0,4200	0,4828	0,2421	0,5578
2	Piemonte	0,4650	0,4057	0,5149	0,2148	0,551
3	Emilia Romagna	0,4677	0,3960	0,5558	0,2334	0,5465
4	Trentino-A.A.	0,6313	0,1450	0,6004	0,2409	0,534
5	Umbria	0,3620	0,4361	0,5230	0,2463	0,5187
6	Toscana	0,3953	0,3542	0,5519	0,2379	0,5159
7	Veneto	0,3610	0,3490	0,5282	0,2016	0,5091
8	Lombardia	0,3963	0,2471	0,5128	0,2248	0,4829
9	Marche	0,2660	0,2884	0,5273	0,2143	0,4669
10	Valle d'Aosta	0,4170	0,1992	0,4317	0,2934	0,4532
11	Liguria	0,3423	0,1992	0,4613	0,2181	0,4462
12	Abruzzo	0,2070	0,3087	0,4045	0,2143	0,4265
13	Basilicata	0,2037	0,3712	0,4014	0,2953	0,4202
14	Molise	0,2047	0,2998	0,3808	0,2632	0,4055
15	Lazio	0,2287	0,0832	0,4775	0,2720	0,3794
16	Puglia	0,1713	0,3095	0,3213	0,2985	0,3759
17	Sardegna	0,2933	0,1718	0,3964	0,3658	0,3739
18	Campania	0,2077	0,1426	0,3901	0,3313	0,3523
19	Calabria	0,2087	0,1522	0,3688	0,3998	0,3325
20	Sicilia	0,1737	0,0827	0,3542	0,3814	0,3073

Source: Lunaria (2004)

8. The relationship between social capital and the quality of economic development

The relationship between social capital and the quality of economic development is investigated by means of an exploratory analysis. A normal PCA is run on the four synthetic indicators of structural social capital and on the three indicators of well-being given by the adjusted human development index, the urban ecosystems index and the social quality index. The first factorial plan satisfactorily explains about 78 percent of the total variance of the dataset, while the first three axes account for 88,10 percent of the variance. The signs of correlations are as expected with some notable exceptions. Bonding social capital (measured by FACBOND) and active political participation (FACPOL) are negatively correlated with all of the indicators of social well-being, differently from

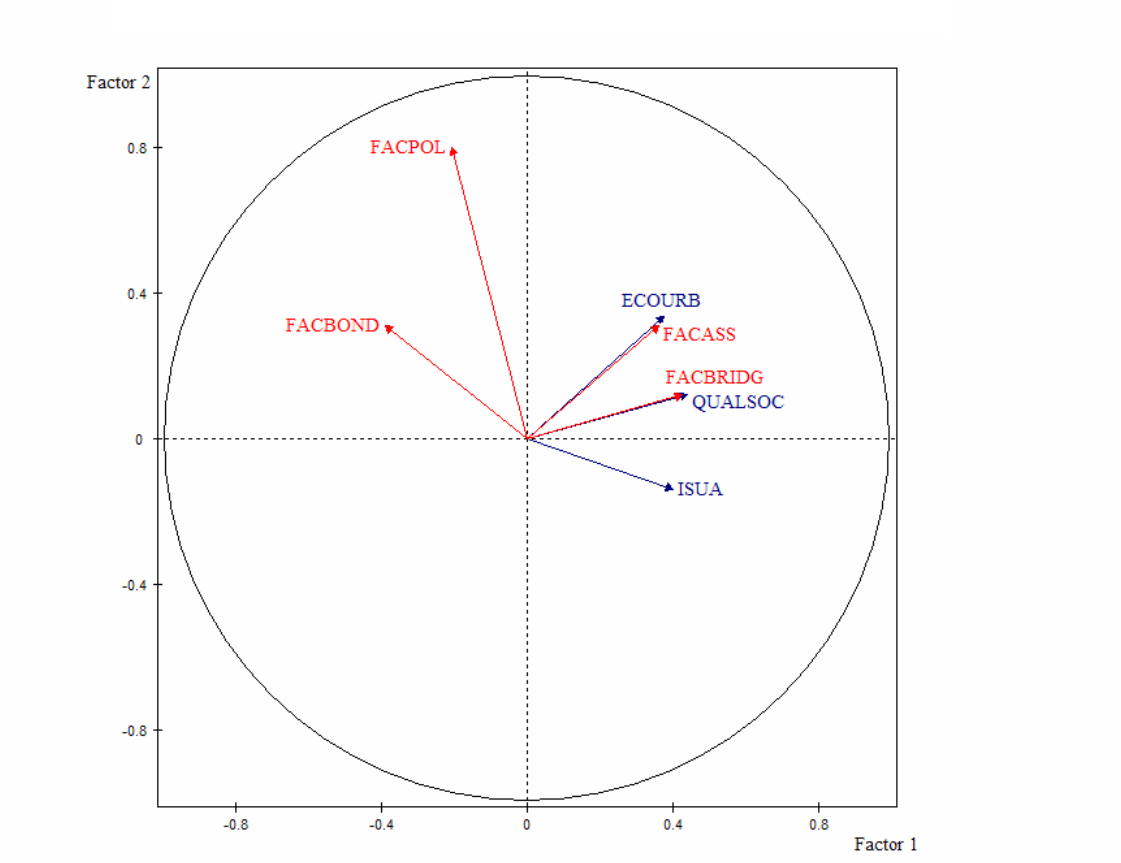
bridging (FACBRIDG) and linking social capital (FACASS). The correlation matrix is reported in Table 14.

Table 14. Correlation matrix resulting from the PCA on social capital and well-being (7 variables)

	ISUA	ECOURB	QUALSOC	FACBOND	FACBRIDG	FACASS	FACPOL
ISUA	1,00						
ECOURB	0,66	1,00					
QUALSOC	0,77	0,80	1,00				
FACBOND	-0,83	-0,48	-0,70	1,00			
FACBRIDG	0,69	0,61	0,82	-0,64	1,00		
FACASS	0,40	0,62	0,68	-0,48	0,83	1,00	
FACPOL	-0,31	-0,18	-0,32	0,38	-0,31	-0,26	1,00

The correlation circle (Figure 3) efficaciously highlights the structure of relationships among variables. Simplifying, it shows a projection of the initial variables in the factors space.

Figure 3. Correlation circle resulting from the PCA on social capital and well-being



When two variables are far from the centre, then they are significantly positively correlated if they are close to each other, and not correlated if they are orthogonal. If they are on the opposite side of

the centre, then they are significantly negatively correlated. When the variables are close to the centre, it means that some information is carried on other axes and that any interpretation might be hazardous. The circle points out a strong positive relationship between the linking social capital of voluntary organizations and the quality of urban ecosystems: eigenvectors associated to FACASS and ECOURB are in fact laid one upon the other. The same is true for bridging social capital (FACBRIDG) and the index of social quality (QUALSOC) summarizing public health efficiency, gender equality, labour stability and the quality of school infrastructures. Interestingly, human development is negatively correlated not only with bonding social capital, but also with active political participation. The orthogonality between eigenvectors representing bonding social capital, on the one side, and the state of health of urban environments and social quality, on the other, implies the absence of a substantial correlation. Human development exhibits a positive but weak correlation with bridging and linking social capital. Indicators of well-being powerfully load on the first axis, as well as bridging and linking social capital. The first principal component can therefore be considered as a suitable indicator of a mix of development-oriented social capital and well-being. Cases contributions are satisfactorily homogenous and most squared cosines are sufficiently high. The second principal component shows a significant positive correlation with active political participation, but low squared cosines suggest a certain caution in interpreting the correspondent axis. Factor loadings and variables-factors correlations are reported in Table 15. They show the same values because the analysis is normed. Axes from third to seventh do not seem particularly meaningful.

Table 15. Factor loadings and variables correlations with the first three axes resulting from the PCA on social capital and well-being (7 variables)

Label variable	Axis 1	Axis 2
ISUA	0,85	-0,13
ECOURB	0,80	0,31
QUALSOC	0,93	0,11
FACBOND	-0,82	0,27
FACBRIDG	0,90	0,13
FACASS	0,78	0,28
FACPOL	-0,43	0,80

The ranking of the Italian regions based on the synthetic indicator of social capital and development represented on the first axis is reported in Table 16. The analysis highlights the well-known polarization between Northern and Southern Italy. Southern regions exhibit the highest levels of bonding social capital and the lowest levels of development and bridging and linking social capital. Trentino Alto Adige leads the ranking, followed by Friuli Venezia Giulia and Emilia Romagna.

These results seem to be coherent with the early thesis sustained by Banfield (1958). In his conclusions of the *Moral Basis of a Backward Society*, the author attributed the underdevelopment of Southern Italy to the lack of trust outside the strict family circle, which he efficaciously labelled "amoral familism".

However, we have to point out that, due to its exploratory nature, the analysis does not shed light on the causal direction of the relationship between social capital and economic development. It is possible to argue that higher levels of economic development determine - for example through improvements in people human capital - the accumulation of bridging and linking social capital. On the other side, Southern Italy's underdevelopment could be seen as a main cause for the growth of amoral familism.

Table 16. Italian regions ranking based on social capital and economic development

Rank	Region	Factor scores	Contribution	Squared cosines
1	Trentino Alto Adige	3,23	11,56	0,53
2	Friuli Venezia Giulia	2,41	6,45	0,87
3	Emilia Romagna	2,11	4,97	0,57
4	Toscana	2,07	4,77	0,87
5	Veneto	1,49	2,45	0,74
6	Piemonte	1,45	2,32	0,51
7	Lombardia	1,40	2,19	0,71
8	Valle d'Aosta	1,27	1,80	0,33
9	Liguria	1,18	1,55	0,28
10	Umbria	1,06	1,24	0,42
11	Marche	0,99	1,10	0,49
12	Abruzzo	-0,44	0,22	0,13
13	Lazio	-0,54	0,32	0,09
14	Molise	-1,18	1,53	0,31
15	Basilicata	-1,21	1,63	0,24
16	Sardegna	-1,46	2,36	0,67
17	Puglia	-3,04	10,27	0,84
18	Campania	-3,34	12,41	0,79
19	Calabria	-3,67	14,96	0,87
20	Sicilia	-3,78	15,90	0,82

9. The role of public spending

Starting from the assumption that public spending plays a fundamental role in improving the quality of life, well-being is measured by Lunaria (2004) also through the amount of public expenditure for education, health care, welfare work and the environment protection at the regional level. The index summarizing public spending quality is computed as the arithmetic mean of four dimensional indexes, each one expressed by the ratio:

$$index = \frac{effective\ \ value - minimum\ \ value}{target\ \ value - minimum\ \ value}.$$

Target values are equal to those registered in more efficient EU countries, and are described in detail in Table B4. Considered data refer to the expenditure carried out at the regional level by each body of the public administration (state, regions, provinces, municipalities, and other public boards) for each branch of the OECD functional classification. Transfers are not included. Of course the amount of public spending is not necessarily representative of its quality. Southern regions exhibiting lower levels of human development and well-being are often those spending the higher amounts. However, the expenditure provides an useful idea of the public supply of resources for pursuing collective well-being.

A PCA allows us to explore public expenditure's correlation with social capital and well-being. Trentino Alto Adige, Valle d'Aosta and Lazio are treated as outliers, due to their excessively high absolute contributions to the explanation of principal components. First three principal components satisfactorily explain 86,79 percent of the total variation of the dataset. In spite of a slight modification in the structure of relations among variables, the analysis does confirm the strong positive correlation connecting social capital and the quality of development. The correlation matrix is reported in Table 17.

Public spending exhibits weak correlations both with all social capital dimensions and with indicators of well-being. Interestingly the correlation with the social quality index is negative. This may confirm the intuition that higher amounts of expenditure do not necessarily correspond to higher quality. At the same time, it is noteworthy that active political participation - in terms of carrying out unpaid work for parties and joining to marches and meetings - does not increase public spending amounts. The latter exhibits a weakly negative correlation even with the linking social capital of voluntary organizations.

Table 17. Correlation matrix resulting from the PCA on social capital, well-being and public spending

	ISUA	ECOURB	QUALSOC	QUASPUB	FACBOND	FACBRIDG	FACASS	FACPOL
ISUA	1,00							
ECOURB	0,81	1,00						
QUALSOC	0,87	0,81	1,00					
QUASPUB	0,03	-0,04	-0,16	1,00				
FACBOND	-0,84	-0,60	-0,78	0,09	1,00			
FACBRIDG	0,86	0,66	0,86	-0,05	-0,68	1,00		

FACASS	0,80	0,62	0,80	-0,08	-0,76	0,89	1,00	
FACPOL	-0,30	-0,18	-0,34	0,13	0,33	-0,25	-0,20	1,00

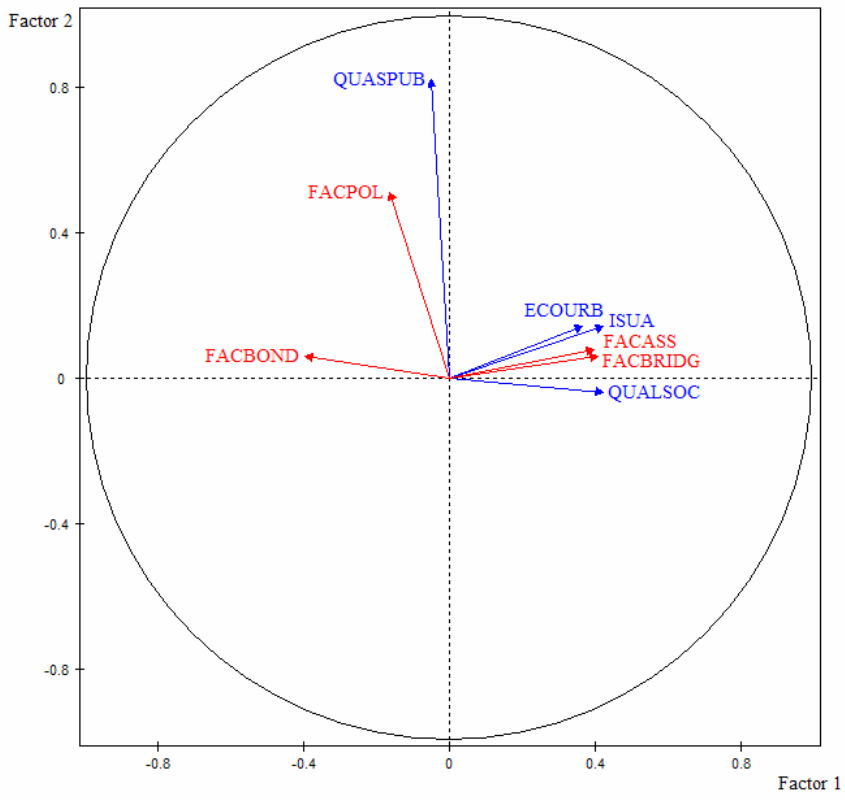
In some, virtuos, cases, this could be interpreted as a positive effect carried out by civic and political participation on public action's effectiveness and rationalization. Well-being, bridging and linking social capital powerfully load on the first axis which can be interpreted again as a synthetic indicator of social capital and economic development. Higher levels of public expenditure are associated to higher factor scores on the second, vertical, axis. Factor loadings and variables-factors correlation are reported in Table 18.

Table 18. Factor loadings and variables correlations with the first three axes resulting from the PCA on social capital, well-being and public spending

Label variable	Axis 1	Axis 2	Axis 3
ISUA	0,95	0,13	-0,05
ECOURB	0,82	0,13	0,11
QUALSOC	0,95	-0,06	0,05
QUASPUB	-0,10	0,86	-0,50
FACBOND	-0,87	0,04	0,06
FACBRIDG	0,91	0,09	0,07
FACASS	0,89	0,07	0,13
FACPOL	-0,37	0,54	0,75

Figure 4. Correlation circle resulting from the PCA on social capital, public spending and well-being

Figure 2. Correlation circle resulting from the PCA on social capital, well-being and public spending

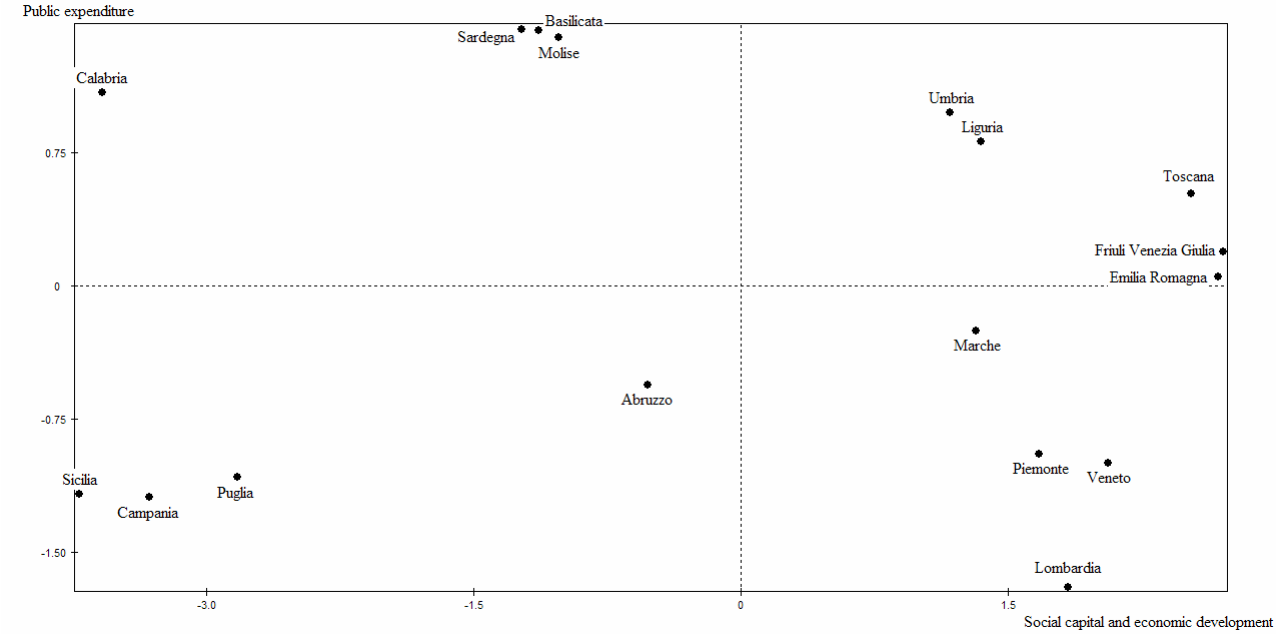


The correlation circle (Figure 4) highlights the negative correlation between bonding social capital and human development and the positive correlation between well-being and bridging and linking social capital.

The scattergram of the Italian regions is represented in Figure 5. The polarization highlighted in the scattergram points out the possibility that higher levels of public spending can be related to bad practices and not necessarily exert a positive effect on social capital and well-being (fourth quadrant, with a "case" emerging for Calabria). Regions exhibiting. More temperate levels of expenditure are instead associated with higher levels of social capital and well-being (first and second quadrant).

Figure 5. Scattergram of the Italian regions resulting from the PCA on social capital, public spending and well-being

Figure 3. Scattergram of the Italian regions resulting from the PCA on social capital, well-being and public spending



10. Concluding remarks and guidelines for further researches

Overall, the empirical evidence in this paper shows a clear distinction between two types of networks. The former is shaped by strong family ties, and corresponds to what the theoretical literature generally calls bonding social capital. The latter is shaped both by weak ties among friends and neighbours and by formal ties linking together people coming from different social backgrounds within the boundaries of voluntary organizations. Such networks, corresponding to what the literature has often termed "bridging" and "linking" social capital, tend to juxtapose each other in the Italian regions. Areas characterized by higher levels of bonding social capital can suffer from a lack of bridging and linking social capital. Even if strong ties play an important role in improving well-being, weak ties are generally more relevant to the purposes of economic development, in that they connect people belonging to different social groups, providing access to information and opportunities that would not be available within the narrow boundaries of familiar networks. Bonding social capital exhibits a strongly negative correlation with human development and social well-being. On the contrary, bridging and linking social capital are positively associated with such outcomes. Particularly, the analysis shows a strong, positive, correlation both between linking social capital and the quality of urban ecosystems, and between bridging social capital and the index of "social quality". Southern regions exhibit the highest levels of bonding social capital and the lowest levels of development and of bridging and linking ties.

The main shortcoming of the study is the impossibility of building a *panel*, allowing us to analyze social capital's dynamics and to carry out more reliable investigations on the relationship with its

supposed outcomes. Istat's multipurpose surveys have been started in 1993, but they have not registered always the same behaviours. Only recently, the Italian National Bureau of Statistics has broadened the scope of surveys in order to measure items particularly suitable for the assessment of social capital's diverse dimensions. Due to the exploratory nature of the adopted methodology, the analysis does not allow us to shed light on the causal direction of the positive relationship between social capital and economic development. Of course, it is possible to argue that higher levels of economic development determine the accumulation of bridging and linking social capital, and not vice versa. On the other side, Southern Italy's underdevelopment could be seen as a main cause for the growth of amoral familism. Therefore, this study aims to constitute a first step in an accurate investigation of this relationship, providing useful guidelines for further "confirmatory" approaches, both theoretical and empirical. In a companion paper (Sabatini, 2005b), the intensity and direction of *causal* relationships linking social capital to its outcomes are analyzed by means of structural equations models. This technique has grown up in psychometrics at the beginning of the 70s and, although its application is a novelty for economic studies, it proves to be particularly suitable for the investigation of multidimensional phenomena like social capital and economic development. The study substantially confirms relationships emerging from PCAs performed in this paper, but also points out some notable exceptions and poses the need to make important specifications and to carry out further researches (Sabatini, 2005b).

Anyway, the analysis carried out in this paper significantly contributes to future research on the empirics of social capital in Italy and offers the possibility to develop fertile comparisons of Italy with other developed countries, since:

b. synthetic indicators built in this paper are based on measures that the Istat is going to collect also in next years, thus tracing an ideal pathway for new longitudinal investigations to be carried out in the future.

c. Other national bureaus of statistics have started building panels for the measurement of social capital. In most cases, such sets of data include items very similar to those adopted in this chapter. In particular, significant progress in this direction has been recently carried out in Australia (see Australian Bureau of Statistics, 2004, cited in bibliography), the United Kingdom (National Statistics, 2001 and 2003, Harper and Kelly, 2003, Green and Fletcher, 2003a and 2003b, Whiting and Harper, 2003, Deviren and Babb, 2005, Babb, 2005), New Zealand (Statistics New Zealand, 2004), the Netherlands (Van der Gaag and Snijders, 2004,

Flap and Wölker, 2004)[4], Sweden (Kumlin and Rothstein, 2005)[5]. In Germany, the German Institute for Economic Research started elaborating the German Socio-Economic Panel Study (SOEP) in 1984. This wide-ranging longitudinal survey currently covers about 23,000 individuals living in more than 12,000 private households, and collects items very similar to those proposed in the Istat's multipurpose surveys. In the United States, the *General Social Survey* (GSS), developed by the National Opinion Research Centre (NORC) at the University of Chicago, contains multiple indicators capturing different social capital's dimensions from 1975 to date. Moreover, the *Saguaro Seminar* of the John F. Kennedy School of Government at Harvard University measures different social capital's dimensions within the *Social Capital Community Benchmark Survey*, the largest-ever survey on the civic engagement of Americans, involving about 30,000 people. In Europe, The *European Commission Directorate General for Employment and Social Affairs* has recently established to fund the creation of a *Network on Social capital, Social Cohesion, Trust and Participation*, as part of the new *European Observatory* aimed at informing the social policy debate and providing analytical input for the Report on the social situation in the European Union. The network will involve academic institutions belonging to all member countries (including new entrants) with the aim to carry out an accurate measurement of diverse social capital's dimensions.

Summarizing, this paper contributes to the social capital literature in three main ways. Firstly, the methodological framework offers the possibility to carry out reliable and precise international comparisons. Secondly, the analysis provides a single, synthetic, indicator capturing that particular configuration of social capital which the literature generally associates with positive economic outcomes. This indicator is a novelty in the social capital literature, and constitutes a new analytical tool in the hands of researchers aiming to investigate on the relationship between social capital and its outcomes, both at national and cross-country level. Thirdly, it provides further evidence of the very multidimensionality of the concept of social capital. Social capital's different dimensions exert different influences on various economic outcomes.

[4] Van der Gaag and Snijders (2004) and Flap and Wölker (2004) suggest a framework for the measurement of social capital on the basis of data supplied by the Dutch Central Bureau of Statistics in its annual *Survey of Social Networks of the Dutch*.

[5] Kumlin and Rothstein (2005) adopts a framework for the measurement of trust in Sweden drawing data from the SOM Institute's annual nationwide survey, *Risk-SOM*. The SOM (Society, Opinion, Media) Institute is a research centre at the Göteborg University.

11. Bibliography

Alesina A. and La Ferrara E. (2000), *Participation in Heterogeneous Communities*, The Quarterly Journal of Economics, CXV, 847-904.

Almond, G., Verba, S. (1963), *The Civic Culture*, Princeton, Princeton University Press.

Amato, P. (1998) "More than money? Men's contribution to their children's lives" , in A. Booth and A. Creuter (eds.) *Men in Families: When do they get involved? What difference does it make?*, Lawrence Erlbaum, New Jersey.

Antoci, A., Sacco, P.L. and Vanin, P. (2001), *Economic Growth and Social Poverty: The Evolution of Social Participatio*n, Bonn, Graduate School of Economics, Discussion Paper n. 13.

Banca d'Italia (2004), *I bilanci delle famiglie italiane nell'anno 2002*, Supplemento al Bollettino statistico N. 12 del marzo 2004, Roma, Banca d'Italia.

Banfield, E.G. (1958), *The Moral Basis of a Backward Society*, New York, Free Press.

Barro, R.J. (1994), *Democracy and Growth*, NBER Working Paper No. W4909.

Barro, R.J. (1996), *Determinants of Economic Growth: A Cross-Country Empirical Study*, NBER Working Paper No. W5698.

Bolasco, S. (2002), *Analisi multidimensionale dei dati. Metodi, strategie e criteri d'interpretazione*, Roma, Carocci.

Bourdieu, P. (1980), *Le capital social*, in ″Actes de la Recherche en Sciences Sociales″, 31 (1980), 2-3.

Bourdieu, P. (1986), *The forms of capital*, in J.G. Richardson (ed.), *Handbook of Theory and Research for the Sociology of Education*, New York, Greenwood Press, 241-258.

Bourdieu, P. and L. Wacquant (1996), *An Invitation to reflexive sociology*, Cambridge, Polity.

Brehm, J., Rahn, W. (1997), *Individual-Level evidence for the causes and consequences of Social Capital*, "American Journal of Political Science", 41, 3, 999-1023.

Brown, L.D. and D. Ashman (1996), *Participation, social capital and intersectoral problem solving, African and Asian cases*, in "World Development", 24(6), 1467-79.

Cole, H.L., Mailath, G. and Postlewaith, A. (1992), *Social Norms, Savings Behaviour, and Growth*, "Journal of Political Economy", C (1992), 1092-1125.

Coleman, J. (1988), *Social Capital in the Creation of Human Capital*, in "American Journal of Sociology", Vol. 94, S95-S120.

Coleman, J. (1990), *Foundations of Social Theory*, Cambridge, MA, Harvard University Press.

Collier, P. and Gunning, J.W. (1997), *Explaining African Economic Performance*, "Journal of Economic Literature", Vol. 37 (March), 64–111.

Costa, D.L., Kahn, M. (2003), *Understanding the American Decline in Social Capital, 1952–1998*, "Kyklos", Vol. 56, No. 1, 17-46(30).

Daly, H., Cobb, J. (1989), *For the Common Good*, Beacon Press, Boston.

Durlauf, S.N. (1999), *The Case Against Social Capital*, in "Focus", vol. 20, n.3.

Durlauf, S.N. (2002), *On the Empirics of Social Capital*, University of Wisconsin, Department of Economics, mimeo.

Durlauf, S.N., Fafchamps, M. (2004), "Social Capital", The Centre for The Study of African Economies Working Paper Series, No. 214, The Berkeley Economic Press.

Escofier, B., Pagès, J., (1984), "L'analyse factorielle multiple: une méthode de comparaison de groupes de variables", in : Sokal, R.R., Diday, E., Escoufier, Y., Lebart, L., Pagès, J. (Eds), *Data Analysis and Informatics III*, North-Holland, Amsterdam.

Fine, B. (2001), *Social Capital versus Social Theory. Political Economy and Social Science at the Turn of the Millennium*, Londra e New York, Routledge.

Foley, M.W., Edwards, B. (1999), *Is It Time to Disinvest in Social Capital?*, "Journal of Public Policy", Vol. 19, No. 2, 199-231.

Furstenberg, F. and M. Hughes, (1995), "Social Capital and Successful Development Among At-Risk Youth", *Journal of Marriage and the Family*, 57, 580-592.

Golden, M.A. (2003), *Electoral Connections: The Effects of the Personal Vote on Political Patronage, Bureaucracy and Legislation in Postwar Italy*, "British Journal of Political Science", No. 33, 189-212.

Granovetter, M.S. (1973), *The Strength of Weak Ties*, "The American Journal of Sociology", Vol 78, No. 6 (May 1973), 1360-1380.

Grootaert, C. (2002), "Does Social Capital Help the Poors? A Synthesis of Findings from the Local Level Institutions Studies in Bolivia, Burkina Faso and Indonesia", Local Level Institutions Working Papers, No. 10, The World Bank.

Guiso, L., Sapienza, P. e Zingales, L. (2004), *The Role of Social Capital in Financial Development*, in "The American Economic Review", vol. 94, n. 3, 526-556.

Heckman, J. (2000), *Causal Parameters and Policy Analysis in Economics: a Twentieth Century Retrospective*, "Quarterly Journal of Economics", Vol. 115, Issue 1, 45-97.

Heliwell, J. (1996), *Economic Growth and Social Capital in Asia*, NBER Working Paper No. W5470.

Heliwell, J.F., and Putnam, R.D. (1995), *Economic Growth And Social Capital In Italy*, "Eastern Economic Journal", 21, 295-307.

Hong, H., Kubik, J.D. and Stein, J.C. (2001), *Social interaction and stock-market participation*, NBER Working Paper No. 8358.

Hooghe, M. (2003), *Participation in Voluntary Associations and Value Indicators*, "Nonprofit and Voluntary Sector Quarterly" 32(1).

Hooghe, M. and Stolle, D. (eds) (2003), *Generating Social Capital: Civil Society and Institutions in Comparative Perspective*, New York, Palgrave.

ISTAT (2000), *I cittadini e l'ambiente. Indagine multiscopo sulle famiglie "Aspetti della vita quotidiana", Anno 1998*, Roma, ISTAT.

ISTAT (2001a), *Parentela e reti di solidarietà. Indagine multiscopo sulle famiglie "Famiglia, soggetti sociali e condizioni dell'infanzia", Anno 1998*, Roma, ISTAT.

ISTAT (2001b), *Sistema sanitario e salute della popolazione*, Roma, ISTAT.

ISTAT (2001c), *Indicatori regionali per la valutazione delle politiche di sviluppo*, Roma, ISTAT.

ISTAT (2002a), *I cittadini e le tecnologie della comunicazione. Indagine multiscopo sulle famiglie "I cittadini e il tempo libero", Anno 2000*, Roma, ISTAT.

ISTAT (2002b), *Le attività del tempo libero. Indagine multiscopo sulle famiglie "I cittadini e il tempo libero", Anno 2000*, Roma, ISTAT.

ISTAT (2002c), *Letture e linguaggio. Indagine multiscopo sulle famiglie "I cittadini e il tempo libero", Anno 2000*, Roma, ISTAT.

ISTAT (2002d), *L'offerta di servizi sportivi in Italia*, Roma, ISTAT.

ISTAT (2003), *Famiglia, abitazione e zona in cui si vive. Indagine multiscopo sulle famiglie "Aspetti della vita quotidiana", Anno 2002*, Roma, ISTAT.

ISTAT (2004a), *Cultura, socialità e tempo libero. Indagine multiscopo sulle famiglie "Aspetti della vita quotidiana", Anno 2002*, Roma, ISTAT.

ISTAT (2004b), *Le organizzazioni di volontariato in Italia, Anno 2001*, Roma, ISTAT.

ISTAT (2004c), *Bilancio demografico regionale della Liguria, Anno 2003*, Roma, Istat.

ISTAT (2004d), *Separazioni, divorzi e affidamento dei minori, Anno 2002*, Roma, ISTAT.

Johnson, P. and Temple, J. (1998), *Social Capability and Economic Growth*, "Quarterly Journal of Economics", 113(3):965–90.

Johnson, R.A., Wichern, D.W. (1992), *Applied Multivariate Statistical Analysis*, New York, Prentice Hall.

Lawn, P. and Sanders, R. (1999), *Has Australia surpassed its optimal macroeconomic scale: finding out with the aid of benefit and cost account and a sustainable net benefit index*, "Ecological Economics", No. 28, 213-229.

Lebart, L., Morineau, A. and Warwick, K.M. (1984), *Multivariate Descriptive Statistical Analysis. Correspondence Analysis and Related Techniques for Large Matrices*, New York, John Wiley & Sons.

Legambiente (2003a), *Ecosistema urbano 2004*, Roma, Legambiente.

Legambiente (2003b), *Ecosistema scuola 2003*, Roma, Legambiente.

Lunaria (2004), *Come si vive in Italia? Qualità sociale, diritti umani, ambiente, politiche pubbliche regione per regione*, Roma, Lunaria.

Knack, S. (1992), *Civic Norms, Social Sanctions, and Voter Turnout*, "Rationality and Society", Vol. IV (1992), 133-156.

Knack, S. (1999), *Social Capital, Growth, and Poverty: A Survey of Cross-Country Evidence*, Social Capital Initiative Working Paper 7, Social Development Department, World Bank, Washington.

Kormendi, R.C. and Meguire, P.G. (1985), *Macroeconomic Determinants Of Growth: Cross-Country Evidence*, "Journal of Monetary Economics", 16, 141-163.

Max-Neef, M. (1989), *Human Scale Development. Conception, Application and Further Reflections*, New York, Apex Press.

Mutti, A. (2000), *Particularism and the Modernization Process in Southern Italy*, "International Sociology", Vol. 15, No. 4, 579-590.

Mutz, D. (2002), *Cross-cutting Social Networks: Testing Democratic Theory in Practice*, "American Political Science Review", 96(1), 111-126.

Paxton, P. (1999), *Is Social Capital Declining in the United States? A Multiple Indicator Assessment*, "American Journal of Sociology", Vol. 105, No. 1, 88-127.

Paldam, M. and G.T. Svendsen (2002), *Missing Social Capital And The Transition From Socialism*, in "Journal for Institutional Innovation, Development and Transition", 5, 21-34.

Popielarz, P. (1999), *(In)voluntary Association: A Multilevel Analysis of Gender Segregation in Voluntary Associations*, "Gender and Society", 13(2), 234-250.

Putnam, R.D., Leonardi, R. and Nanetti, R.Y. (1993), *Making Democracy Work*, Princeton, Princeton University Press.

Putnam, R.D. (1995a), *Bowling Alone: America's Declining Social Capital*, "Journal of Democracy", VI, 65-78.

Putnam, R.D. (1995b), *Tuning In, Tuning Out: The Strange Disappearance of Social Capital in America*, "PS: Political Science and Politics", XXVIII, 664-683.

Putnam, R.D. (2000), *Bowling Alone : The Collapse and Revival of American Community*, New York, Touchstone Books.

Redefining Progress (1995), *Gross Production versus Genuine Progress. Excerpt from the Genuine Progress Indicator: Summary of Data and Methodology*, San Francisco, Redefining Progress.

Routledge, B. and von Amsberg, J. (2003), *Social Capital and Growth*, "Journal of Monetary Economics", Vol. 50, Issue 1, 167-193.

Sabatini, F. (2005a), "Resources for the Study of Social Capital", *The Journal of Economic Education*, Vol. 36, No. 2, Spring 2005: 198.

Sabatini, F. (2005b), "Social Capital and Economic Development. Investigating the Causal Relationship through Structural Equations Models", University of Rome La Sapienza, Department of Public Economics, mimeo.

Seligson, A. (1999), *Civic Association and Democratic Participation in Central America*, "Comparative Political Studies", No. 32, 342-362.

Sen, A. (1981), *Public Action and the Quality of Life in Developing Countries*, "Oxford Bulletin of Economics and Statistics", November 1981, No. 43(4), 287-319.

Stolle, D. (1998), *Bowling Together, Bowling Alone: The Development of Generalized Trust in Voluntary Associations*, "Political Psychology", No. 19, 497-525.

Stolle, D. and Rochon, T. (1998), *Are All Associations Alike? Member Diversity, Associational Type, and the Creation of Social Capital*, "American Behavioral Scientist", No. 42, 47-65.

Temple, J. (1998), *Initial Conditions, Social Capital, and Growth in Africa*, "Journal of African Economies", 7(3):309–47.

Torsvik, G. (2000), *Social Capital and Economic Development: A Plea for the Mechanism*, in "Rationality and Society", 12, 451-476.

Uslaner, E.M. (2002), *The Moral Value of Trust*, Cambridge, Cambridge University Press.

Walston, J. (1988), *The Mafia and clientelism : roads to Rome in post-war Calabria*, London and New York, Routledge.

Wollebæk, D. and Selle, P. (2003), *Participation and Social Capital Formation: Norway in a Comparative Perspective*, "Scandinavian Political Studies", Vol. 26, Issue 1, 67.

Zak, P.J. and Knack, S. (2001), *Trust and Growth*, "The Economic Journal", Vol. 111, 295-331

Annex A. The measurement of social capital in Italy

Table A1. Indicators of family social capital

Label	Description	Year	Source	Mean	St. Dev
AIUGRA	People aged 14 and more who have given unpaid help to strangers for every 100 people of the same area.	1998	ISTAT (2001)	11,105	2,102
CONTPAR	People aged 14 and more particularly caring relatives other than parents, children, grandparents and grandchildren, or counting on them in case of need, for every 100 people of the same area.	1998	ISTAT (2001)	3,905	1,037
COP1FIG	Couples with one child, for every 100 couples with children of the same area.	2001/02	ISTAT (2003)	0,715	0,497
COP3FIG	Couples with three children, for every 100 couples with children of the same area.	2001/02	ISTAT (2003)	53,970	8,256
COPFIG	Couples with children, for every 100 families of the same area.	2001/02	ISTAT (2003)	18,470	4,861
COPNOFIG	Couples without children, for every 100 families of the same area.	2001/02	ISTAT (2003)	71,500	5,424

FAM5COMP	Families with 5 components and more for every 100 families of the same area.	2001/02	ISTAT (2003)	10,990	3,995
FAMSINGL	Singles-families for every 100 families of the same area.	2001/02	ISTAT (2003)	72,790	5,022
FIG16KM	People aged 15 and more with children living 16 kilometres away or more (in Italy or abroad) for every 100 families with children of the same area.	1998	ISTAT (2001)	10,225	3,958
FIG1KM	People aged 15 and more with children living within 1 kilometre (cohabitants or not) for every 100 families with children of the same area.	1998	ISTAT (2001)	86,245	3,594
FRA16KM	People having their brothers and/or sisters living 16 kilometres away or more (in Italy or abroad) for every 100 people with brothers and/or sisters of the same area.	1998	ISTAT (2001)	4,105	1,238
FRA1KM	People having brothers and/or sisters living within 1 kilometre (cohabitants or not) for every 100 people with brothers and/or sisters of the same area.	1998	ISTAT (2001)	24,930	4,344
FRATELTG	People meeting their brothers and/or sisters everyday for every 100 people with brothers and/or sisters of the same area.	1998	ISTAT (2001)	6,955	3,199
INCPARTG	People aged 6 and more meeting family members or other relatives everyday for every 100 people of the same area.	2000	ISTAT (2002b)	59,735	5,448
MUM16KM	People up to 69 having their mother living 16 kilometres away or more (in Italy or abroad) for every 100 people with an alive mother of the same area.	1998	ISTAT (2001)	28,595	5,408
MUM1KM	People up to 69 having their mother living within 1 kilometre (cohabitant or not) for every 100 people with an alive mother of the same area.	1998	ISTAT (2001)	46,055	9,139
NOINCPA	People aged 6 and more never meeting their family members and other non cohabitant relatives for every 100 people of the same area.	2000	ISTAT (2000b)	10,790	4,937
NOPARENT	People aged 6 and more having neither a family nor other non cohabitant relatives for every 100 people of the same area.	2000	ISTAT (2000b)	23,075	4,900
PAP16KM	People up to 69 having their father living 16 kilometres away or more (in Italy or abroad) for every 100 people with an alive father of the same area.	1998	ISTAT (2001)	41,990	6,874
PAP1KM	People up to 69 having their father living within 1 kilometre (cohabitant or not) for every 100 people with an alive father of the same area.	1998	ISTAT (2001)	39,030	6,647
SICENGPA	Families with at least 2 components used to have dinner with other relatives at least once a week for every 100 families of the same area.	1998	ISTAT (2001)	53,670	4,916
VFIGTG	People meeting their children everyday for every 100 people with non cohabitant children of the same area.	1998	ISTAT (2001)	43,245	4,176
VMUMTG	People meeting their mother everyday for every 100 people with non cohabitant mother of the same area.	1998	ISTAT (2001)	17,075	3,253
VPAPTG	People meeting their father everyday for every 100 people with non cohabitant father of the same area.	1998	ISTAT (2001)	22,435	4,463

Table A2. Indicators of the informal networks of friends and neighbours

Label	Description	Year	Source	Mean	St.dev
ASSPORT	Non profit sport clubs for every 10.000 people of the same area.	2002	ISTAT (2002d)	11,440	4,829
BAR2S	People aged 6 and more attending bars, pubs, and circles at least once a week for every 100 people of the same area.	2000	ISTAT (2002b)	21,500	4,076
CENAF2S	People aged 6 and more having dinner outside more than once a week for every 100 people of the same area.	2000	ISTAT (2002b)	5,045	1,198
INCAMI2S	People aged 6 and more meeting friends more than once a week for every 100 people of the same area.	2002	ISTAT (2004)	28,735	1,485
MUBAR	People aged 14 and more attending pubs and bars to listen to music concerts for every 100 people of the same area.	2000	ISTAT (2002b)	18,620	2,411
MUCENSOC	People aged 14 and more attending social centres to listen to music concerts for every 100 people of the same area.	2000	ISTAT (2002b)	2,470	0,874
NOBAR	People aged 6 and more never attending bars, pubs and circles for every 100 people of the same area.	2000	ISTAT (2002b)	47,865	6,513
NOCENF	People aged 6 and more never having dinner outside for every 100 people of the same area.	2000	ISTAT (2002b)	17,265	4,954

NOPARLCO	People aged 6 and more never talking with others for every 100 people of the same area.	2000	ISTAT (2002b)	8,510	1,269
NOPARVIC	People aged 6 and more never talking with neighbours for every 100 people of the same area.	2000	ISTAT (2002b)	25,585	3,314
PARCON2S	People aged 6 and more talking with others once a week or more for every 100 people of the same area.	2000	ISTAT (2002b)	46,965	6,074
PARVIC2S	People aged 6 and more talking with neighbours once a week or more for every 100 people of the same area.	2000	ISTAT (2002b)	22,940	3,328

Table A3. Indicators of social capital as voluntary organizations

Name	Description	Year	Source	Mean	St. Dev.
AIUTOVOL	People aged 14 and more who have helped strangers in the context of a voluntary organization's activity, for every 100 people of the same area.	1998	ISTAT (2001)	5,080	1,407
AMIVOL	People aged 6 and more who, when meeting friends, carry out voluntary activities for every 100 people meeting friends of the same area.	2002	ISTAT (2004a)	3,920	1,287
ORGANIZ	Voluntary organizations for every 10.000 people	2001	ISTAT (2004b)	4,195	3,284
RIUASCU	People aged 14 and more who have joined meetings in cultural circles and similar ones at least once a year for every 100 people of the same area.	2002	ISTAT (2004)	8,485	3,862
RIUASEC	People aged 14 and more who have joined meetings in ecological associations and similar ones at least once a year for every 100 people of the same area.	2002	ISTAT (2004)	1,755	0,458
SOLDASS	People aged 14 and more who have given money to an association at least once a year for every 100 people of the same area.	2002	ISTAT (2004)	15,635	6,250

Table A4. Indicators of social capital as active political participation

Label	Description	Year	Source	Mean	St.Dev
ATGRAPAR	People aged 14 and more who have carried out unpaid work for a political party in the 12 months before the interview, for every 100 people of the same area.	2002	ISTAT (2004)	1,500	0,365
COMIZIO	People aged 14 and more who have joined a political meeting in the 12 months before the interview, for every 100 people of the same area.	2002	ISTAT (2004)	6,025	2,698
CORTEO	People aged 14 and more who have joined a march in the 12 months before the interview, for every 100 people of the same area.	2002	ISTAT (2004)	5,700	1,525
SOLDPAR	People aged 14 and more who have given money to a political party in the 12 months before the interview, for every 100 people of the same area.	2002	ISTAT (2004)	2,630	1,178

Annex B. Measuring well-being in Italy

NGOs joining Lunaria's campaign of assessment of national budget law are: Altreconomia, Antigone, Arci, Arci Servizio Civile, Associazione Finanza Etica, Associazione Obiettori nonviolenti, Associazione per la Pace, Beati i Costruttori di Pace, Campagna per la Riforma della Banca Mondiale, Carta, CIPSI, Cittadinanzattiva, Cnca, Comitato Italiano Contratto Mondiale sull'Acqua, Coop. ROBA dell'Altro Mondo, CTM - Altromercato, Donne in nero, Emergency, Fondazione Responsabilità Etica, ICS, Legambiente, Lila, Lunaria, Mani Tese, Medici Senza Frontiere, Microfinanza, Pax Christi, Rete Lilliput, Terre desHommes, UISP, Unione degli Studenti, Unione degli Universitari, Un Ponte per…, WWF.

Table B1. Indicators of human development

Label	Description	Year	Source
ISUA	Adjusted human development index, computed as the arithmetic mean of LIFE, SCHOOL and INCOME	2001/02	Lunaria (2004)
LIFE	Dimensional index of life expectancy. Minimum value = 50 years. Target value = 80 years	2001	Lunaria (2004) drawing on ISTAT (2001b)
SCHOOL	Dimensional index of high school attendance, given by the percentage of people aged from 14 to 18 who are enrolled in high schools. Minimum value = 0. Target value = 100	2001	Lunaria (2004) drawing on ISTAT (2001c)
INCOME	Dimensional index of per capita income. Minimum value = 5.000€. Target value = 40.000€. INCOME = [log (effective value) - log(5.000)] / [log(40.000) - log(5.000)]	2002	Lunaria (2004) drawing on Bank of Italy (2004)

Table B2: Basic indicators of urban ecosystems' state of health

1) **Air monitoring**. Number and type of surveying centres (according to DM 20/5/91, DM 25/11/94). Data provided by municipalities, 2002.
2) **NO2**, annual average value (µg/mc). Municipalities, 2002.
3) **PM10**, annual average value (µg/mc). Municipalities, 2002.
4) **Water consumption**, per capita water consumption in respect to the civil supplying (l/res/days). Municipalities, 2002.
5) **Nitrates**, average contents (mg/l) in the drinkable water. Municipalities, 2002.
6) **Water softening** percentage of civil supplying softening. Municipalities, 2002.
7) **Urban waste**. Per capita urban waste production (kg/res/year). Municipalities, 2002
8) **Differentiated waste raising**. Percentage on the total amount of waste. Municipalities, 2002.
9) **Public transport** trips/res/year. Municipalities, 2002.
10) **Circulating cars** cars/100 res. Data provided by the ACI (*Automobile Club Italia*), 2001.
11) **Pedestrian areas** sm/res. Municipalities, 2002.
12) **Controlled traffic areas** (ZTL, *Zone a traffico limitato*), sm/res. Municipalities, 2002.
13) **Cycle tracks**. m/res. Municipalities, 2002.
14) **Public parks and gardens**. sm/res of enjoyable parks and gardens. Municipalites, 2002.
15) **Green open spaces**. Green areas surface (including urban public parks and natural reserves) in respect to the total urban surface (sm/ha). Municipalities, 2002.
16) **Domestic electrical consumption**. Consumo elettrico domestico pro capite (kWh/ab/anno) GRTN, dati 2001 provinciali
17) **Fuels**. Per capita consumption of fuels (kep/ab/anno). Data drawn by the MICA Oil Bulletin, 2001.
18) **ISO 14001 certified firms**. Number of certificates for every billion of added value. Data provided by the Istat, 2000.
19) **Unauthorized buildings**. Number of unauthorized buildings for every 1000 households. Data provided by Cresme Legambiente at the provincial level, 2002.

20) Eco management. Latent indicator synthesizing: public administration purchase procedures of "ecolabel" products, use of biological foods in public refectories, use of recycled paper in public offices, public transport means exerting a low environmental impact. Data provided by Municipalities, 2002

Source: Legambiente (2003a)

Table B3. Indicators of social quality

Label	Description	Year	Source
QUALSOC	Index of social quality, given by the arithmetic mean of SODDSAN, AMBSCUO, PARIOPP and PRECAR.	2000 /02	Lunaria (2004)
SODDSAN	Index of people satisfaction towards public health care services, given by the arithmetic mean of SODMED, SODING and SODIGI.	2000	Lunaria (2004)
SODMED	People aged 14 and more declaring themselves very satisfied with the national health care system, with regard to medical assistance, for every 100 public hospitals patients.	2000	Istat (2001b)
SODINF	People aged 14 and more declaring themselves very satisfied with the national health care system, with regard to nursing assistance, for every 100 public hospitals patients.	2000	Istat (2001b)
SODIGI	People aged 14 and more declaring themselves very satisfied with the national health care system, with regard to hygienic conditions, for every 100 public hospitals patients.	2000	Istat (2001b)
AMBSCU	Weighted average of 52 indicators of the quality of school infrastructures. Weights are given by each province's population. Basic indicators can be equal to 0 (unsatisfactory) or 1 (satisfactory)	2000	Legambiente (2003b)
PARIOPP	Index of gender equality, given by the arithmetic mean of two dimensional indexes measuring women's participation to political affairs and to the labour market. The former is given by women's membership in regional councils. Its maximum value is 1, when women's participation is equal to 50%. The latter is given by the absolute difference between men's and women's employment rates in 2002. It ranges from 1, when there is no difference, to 0, when the difference is equal to 100.	2002	Lunaria (2004)
PRECAR	Index of labour precariousness. It is the complement to the unity of a precariousness index, given by the ratio between three variables representing precariousness and the regional labour force. The three variables are workers with provisional contracts (*lavoratori interinali* and *lavoratori a tempo determinato*), the number of the so-called *co-co-*co (*collaboratori continuati e coordinati*) and the number of people looking for a job. The index ranges from 1 (highest precariousness) to 0.	2000 /02	Lunaria (2004)

Table B4. Minimum and target values for computing public spending dimensional indexes

Branch of public spending	Target value	EU average	Source
Education	2.500 € (approximately corresponding to the level of Denmark)	1.136 €	Lunaria (2004)
Health care	2.000 € (approximately corresponding to the level of Sweden)	1.514 €	Lunaria (2004)
Welfare work	850 €	409 €	Lunaria (2004)
Environment protection	400 € (approximately corresponding to the level of Austria and Netherlands)	159 €	Lunaria (2004)